Letter F1

-----Original Message-----
From: Pete.Kowal@faa.gov [mailto:Pete.Kowal@faa.gov]
Sent: Monday, December 29, 2003 12:00 PM
To: Awada, Wendell S
Cc: Emmerson, John G; cindy.barger; William.McCormick@faa.gov
Subject: Hawaii EIS comments (S: 3 Jan 2004)

Sir/ Ma'am -

Comments to the draft EIS for the Stryker brigade are attached.

v/r,
LTC Pete Kowal
DARR-WP
Los Angeles, CA
(310) 725-3909

(See attached file: Hawaii Draft EIS Comments by DARR.doc)

MSG William D. McCormick
Senior DARR NCO
FAA Western-Pacific Region
(310)725-3908
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Comments

F1-1 1) Page ES-6, Training/Aircraft Flights and UAVs. The SBMR and Wheeler Army Airfield, DMR and KTA/KLOA columns state "UAV operations in restricted airspace". None of these areas are located within restricted airspace.

F1-2 2) Page 4-17. Table 4-3 shows no impact to Special Use Airspace which is true if the restricted area is not expanded to include Qualification Training Range 2 (see page 2-27).

F1-3 3) Page 5-50. ***New or Modified Special Use Airspace.*** This paragraph states "The proposed flights would normally be conducted within the R3109 and R3110 restricted area complex....thus, the UAV flights would use existing special use airspace." Current plans are for the UAVs to launch and recover from the airfield or the gulch adjacent to the airfield. Both are outside restricted airspace which will result in a portion of every flight to be conducted outside restricted airspace. An FAA Certificate of Authorization (COA) must be issued for the portion of the flight to and from the restricted area.

F1-4 4) Page 5-50 and 5-51. *Obstructions to Air Navigation.* This paragraph states that proposed FTI antennas "would also be at sufficient distance from the WAAF runway to be well below the military airport imaginary surface thresholds". This statement is not true. Calculations were done on the East Range 2 antenna and it penetrates the Approach –Departure Clearance surface by 37 ft. Calculations were not performed on the remaining antennas.

F1-5 1) Page ES-6. Installation will need to submit an FAA Form 7460-1 for apron upgrade. Antennas (Fixed tactical internet) may also require FAA Form 7460-1.

F1-6 2) Page ES-8. Ranges created outside of restricted airspace will require a SARSA or CFA

F1-7 3) Page 2-26. South Range Acquisition Area (SRAA) will require SARSA, CFA or restricted area if live fire will be conducted.

F1-8 4) Page 2-27. Range S10 will require SARSA, CFA or restricted airspace

Responses

F1-1
The reconnaissance training subsection of Section 2.3.4 has been modified to include that statement that most of the UAV launch and recovery sites would be within the existing restricted airspace on O'ahu and Hawai'i Islands. However, launching from WAAF or BAAF may be desired for routine training and maintenance. Before such training and maintenance flights, coordination and approval would be sought from the Federal Aviation Administration (FAA). In addition, UAVs would not be launched, nor recovered, at DMR, KTA, KOLA or West PTA, although they would be flown over KTA and West PTA using visual ground monitoring by qualified observers.

F1-2
There is no proposal to expand or extend the R-3109/3110 restricted area complex. A Controlled Firing Area (CFR) would be installed over QTR2.

F1-3
The reconnaissance training subsection of Section 2.3.4 has been modified to include that statement that most of the UAV launch and recovery sites would be within the existing restricted airspace on O'ahu and Hawai'i Islands. However, launching from WAAF or BAAF may be desired for routine training and maintenance. Both the FAA Honolulu Control Facility and the Hawai'i Department of Transportation, Airports Division have been consulted, and their review comments on the DEIS have been incorporated. The FAA has well-defined procedures for remotely operated aircraft such as UAVs. As stated in Section 5.4.2 in the Aviation Safety subsection, a certificate of authorization would be required at least 60 days prior to the proposed commencement of UAV operations. NEPA does not require EISs to analyze remote and speculative impacts when assessing the risk that an action "might have" an environmental effect, especially when that effect would be caused by an accident. As stated in Section 3.4.2, the Army has an excellent aviation safety record. The precise flight paths of the UAVs have not been determined at this time. They will be identified when the Army submits its plans to the FAA when it applies for the FAA Certificate of Authorization for UAV flights.

F1-4
The text has been changed to reflect the fact that no antennas would penetrate the imaginary surface thresholds.

Comments

Letter F2

-----Original Message-----
From: Diane.Tom@faa.gov [mailto:Diane.Tom@faa.gov]
Sent: Monday, January 05, 2004 10:43 AM
To: sbct_eis@poh01.usace.army.mil
Subject: STRYKER Draft EIS

Ms. Barger,

Please see the following for Honolulu Control Facility (Air Traffic - FAA) comments regarding the STRYKER Draft EIS. Although the comment period officially ended 1/3/04, I hope that you will accept our comments and find them useful/constructive.

If you have any questions, please contact me at 808-840-6121.

Thank you.

Diane Tom
Support Manager, Honolulu Control Facility

Responses

F1-5
The Army will comply with all FAA review requirements.

F1-6
A CFA would be established over the QTR2. This is discussed in the EIS.

F1-7
A CFR above SRAA is not being proposed because its already covered by restricted area special use airspace.

F1-8
A CFA would be established over the S10 (QTR2). This is discussed in the EIS.

Comments

Comments have to do with minor inaccuracies to what's written as follows:

F2-1 Volume 1, page 3-15: Talks about general aviation traffic at Ford Island. A statement should be added to say that Ford Island is closed to civil aircraft.

F2-2 Volume 1, page 3-16: Mentions that the US Coast Guard is based at Honolulu International Airport. The US Coast Guard flying operation is really based at Kalaeloa Airport.

F2-3 Volume 1, page 3-17, page 5-49, page 6-30: Air Traffic Control is managed by the Honolulu Control Facility, not Honolulu Air Traffic Control Center.

F2-4 Volume 1, page 3-17 Also on this page, it talks about the Army's aviation safety record over the last 10 years. In Feb 96, an AH1 crashed at Leader Field on Schofield Barracks, killing 2 soldiers. The aircraft was returning to Wheeler AAF on a maintenance test flight.

F2-5 Volume 1, page 5-50: "Restriction of Access to Airports/Airfields" says that the increase in C130 operations at WAAF would not affect the access/use of airports available for public use or affect commercial or private airport arrival and departure flows. This statement is not entirely accurate. IFR traffic into/out of WAAF is limited to one aircraft at a time. Should two C130s require an IFR arrival into WAAF, the second aircraft would have to hold while the first aircraft is on approach. This may affect sequencing into HNL or JRF. Additionally, the Pearl Harbor TFR requires additional coordination should the C130s require the use of the VOR-B approach.

F2-6 Volume 1, page 5-51: "Aviation Safety" talks about increased C130 operations at WAAF and concludes, given the Army's excellent aviation record in Hawaii, that future adverse impacts on public health and safety (is) extremely unlikely. The Army's aviation record over the last 10 years is based primarily on helicopter and small fixed-wing aircraft. C130s are large, 4-engine turbo-props which are less maneuverable and fly faster.

Regarding UAV flights, it will be true that "operations would be conducted in accordance with well-defined FAA procedures for remotely operated aircraft." Presently, we don't know what the procedures are since we haven't agreed to anything yet. What should be a concern are the gliders that operate in or near R3110 with which we don't have any communications.

Comments may be forwarded to Ms Cindy Barger at sbct_eis@poh01.usace.army.mil.

Moses

Responses

F2-1
A note has been added to Table 3-2 that states that Ford Island NAF is closed to civil operations.

F2-2
The text has been changed to reflect this.

F2-3
The text has been changed to reflect this.

F2-4
The text has been modified as follows … "the second [incident] was the crash of an AH-1Cobra, an attack helicopter, at Leader Field on Schofield Barracks, while returning to WAAF on a maintenance test flight."

F2-5
The text has been modified to add the following … "IFR traffic into and out of WAAF is limited to one aircraft at a time. Should two C-130s require an IFR arrival into WAAF, the second aircraft would have to hold while the first aircraft is on approach. While this may affect sequencing into Honolulu International or Kalaeloa airports, it would not ultimately restrict access to them." The height of the Pearl Harbor TFR was recently lowered.

F2-6
The text states that the strict procedures in place governing flight operations in both controlled/uncontrolled airspace and special use airspace makes future adverse impacts on public health and safety extremely unlikely. For UAV flights, the need for an FAA Certificate of Authorization (COA) is acknowledged in the Chapter 4 Airspace aviation safety subsections. While the details of the procedures required by the COA have not yet been negotiated, it is sufficient for the EIS to note this requirement just as it does for other permits, licenses and other entitlements that may be required.

Comments

Letter F3

-----Original Message-----
From: Gordon_Smith@r1.fws.gov [mailto:Gordon_Smith@r1.fws.gov]
Sent: Thursday, October 23, 2003 8:47 AM
To: Barger, Cindy S
Subject: RE: SBCT EIS - Site visit for Kahuku CACTF

Cindy, John, Steve:

I am sending an attachment with general BMP's that we routinely recommend. Please also incorporate them into the record for the proposed CACTF site.

Could one of you follow up and inform us on the question of the NPDES requirement? Because of the extent of the grading at the proposed CACTF site, I'm only comfortable saying we have no concerns *if* there is a NPDES permit for the work. This would be an enforcable mechanism for comprehensive BMP's to be applied during construction, as opposed to "commiting" to the BMP's in the ROI for the EIS.

Thanks again for running this by our office early on, we like projects where our concerns are minimal!

F3-1

Gordon

ps The BAX letter should get to you very soon... it was signed yesterday or maybe the day before.

Responses

F3-1
Information given on the NPDES Permit is outlined in section 7.10, and discussed in Appendix N.

Comments

-----Original Message-----
From: Gordon_Smith@r1.fws.gov [mailto:Gordon_Smith@r1.fws.gov]
Sent: Tuesday, October 21, 2003 10:43 AM
To: Barger, Cindy S
Subject: Re: SBCT EIS - Site visit for Kahuku CACTF

Cindy:

F3-2 I looked over the maps and site schematic, thanks for sending them. We do not have concerns about the location of the grass training airstrip. I do not think that it warrants a FCWA planning aid letter, as have the Schofield-Dillingham and Schofield-Helemano Roads, which clearly had potential impacts because the roads actually crossed streams. (The Schofield BAX letter that we are working on similarly crossed streams, though are concerns are minimal.)

F3-3 My only comment is that the total amount of land clearing and grading for the proposed CACTF construction is substantial. The potential effects of construction-related impacts should be controlled and minimized through the use of BMP's that reduce runoff and sedimentation to aquatic environements.

Is there a formal mechanism for applying BMP's, such as a county grading permit or HIDOH NPDES permit for this project?

Gordon

Responses

F3-2
Thank you for your comment, it has been considered and will be added to our administrative record.

F3-3
This is discussed in chapter 7.10. Compliance with the NPDES and Clean Water Ac are discussed in Appendix N.

Comments

ENCLOSURE

USFWS Recommended Standard Best Management Practices

The Service recommends that the following measures be incorporated into projects to minimize the degradation of water quality and impacts to fish and wildlife resources:

a. dredging, filling, or grading in or adjacent to streams and riparian areas should be scheduled to occur during low flow periods;

b. no project-related materials (fill, revetment rock, pipe etc.) should be stockpiled in the water or riparian areas;

F3-4

c. all project-related materials and equipment placed in the water should be free of pollutants;

d. no contamination (trash or debris disposal, alien species introductions, etc.) of aquatic environments should result from project-related activities;

e. fueling of project-related vehicles and equipment should take place away from streams and riparian areas and a contingency plan to control petroleum products accidentally spilled during the project should be developed. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of petroleum spills; and,

f. turbidity and siltation from project-related work should be minimized and contained to the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse weather conditions.

Responses

F3-4

Section 4.8 has been updated to include these standard Army BMPs as mitigation for potential impacts to surface water quality.

Comments

Letter F4

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Boulevard, Suite 1110
Honolulu, Hawaii 96814-0047

January 3, 2004

Ms. Cindy Barger
U.S. Army Corps of Engineers, Honolulu District
Building 230, CEPOH-PP-E
Ft. Shafter, HI 96858-5440

RE: Comments on the Draft Environmental Impact Statement for the Transformation of the 2nd Brigade, 25th Infantry (L) to a Stryker Brigade Combat Team in Hawaii (dated October 2003)

Dear Ms. Barger:

We have reviewed the Draft Environmental Impact Statement (DEIS) for the Transformation of the 2nd Brigate, 25th Infantry (L) to a Stryker Brigade Combat Team in Hawaii (Transformation), dated October 2003, and are pleased to offer comments on the DEIS in this letter.

Given the time frame for comments (i.e., approximately two months), we focused our review on the Biological Impacts sections of the DEIS, as those sections appeared most relevant to the Protected Resources Division. These comments do not represent a complete analysis of the entire DEIS.

Importantly, this review does not constitute a consultation under section 7 of the Endangered Species Act on the Transformation, since the Army already has initiated a consultation on this activity. Specifically, on June 20, 2003, the Army issued a letter to the National Marine Fisheries Service (NOAA Fisheries) stating the Army's determination that the actions associated with the Transformation (as listed in that letter) would not be likely to adversely affect federally listed marine mammals or turtles. On July 29, 2003, we issued a letter concurring with the Army's determination in the June 20, 2003, letter. However, if the activities associated with the Transformation differ from those articulated in the letter, a re-initiation of consultation will be appropriate to address the actual impacts on federally-listed species and critical habitat.

Our comments on the DEIS are presented as follows:

F4-1 1) Discussion of Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS). The Regions of Influence (ROIs) for Dillingham Military Reservation (DMR) and Pohakuloa Training Area (PTA) overlap with the HIHWNMS. As a result, the HIHWNMS should be discussed as a "Sensitive Habitat" in each of the chapters for which it is relevant. For example, in section 3.10.2 (Resource Overview), which discusses Critical Habitat and Recovery Plans, no mention is made in this section of the HIHWNMS or the requirements associated with the

Responses

F4-1
This information has been added to sections 3.10, 6.10, and 8.10 as per comment.

Comments

F4-1 cont'd National Marine Sanctuaries Act. Similarly, in section 8.10.1 (addressing PTA), under the Sensitive Habitats subsection, no mention is made of the HIHWNMS or the Sanctuaries Act.

2) Impacts on Sea Turtles. The discussions of sea turtles in the Affected Environment sections and their associated tables (e.g., sections 6.10.1 and 8.10.1) and in Appendix I-1 do not present a sufficiently comprehensive discussion of the distribution of turtle populations in the SBCT ROI. These sections need to be further fleshed out to discuss the distribution and likely presence/absence of turtle populations in the ROI. In particular:

F4-2

- Green turtles are federally listed as threatened and are found in inshore waters. The conclusion that individual turtles may occur in the ROI does appear to be correct.
- Hawksbill turtles are known to nest in Hawaii and are found in the nearshore environment in the Hawaiian islands. However, the DEIS does not address the potential for interactions with hawksbills anywhere in the document. In particular, even though section 8.10.1 indicates that hawksbills may nest on the Island of Hawaii, there is no discussion of whether those nesting areas are near or in the marine portion of the ROI.
- Leatherback turtles are federally listed as endangered. Around the Hawaiian islands, these animals occur primarily in the pelagic environment.
- Olive Ridley turtles may be found in the pelagic environment around the Hawaiian islands (as leatherbacks are).
- Loggerhead turtles may be found in the pelagic environment around the Hawaiian islands (as leatherbacks are).

It would appear from the bibliography that the information on Pacific sea turtles was taken from the extremely limited descriptions of the species and their habitat on the NOAA Fisheries Office of Protected Resources website. The authors should contact, at a minimum, Mr. George Balazs at the Pacific Islands Fisheries Science Center for further information to make a more informed determination of the impacts of the Transformation on these species. In addition, the Recovery Plans for all five turtle species should be reviewed for information on potential interactions with these species.

3) Dillingham Military Reservation (DMR)

F4-3

a) The analysis concludes that, because runoff generated by Transformation activities is within the normal range, no adverse impacts are anticipated (i.e., Page 6-96, No Impacts, last sentence). One of the reasons given for this conclusion is that no in-water or beach activities are anticipated. However, runoff, by definition, originates upland from the beach. As a result, in-water or beach activities, while they may or may not be detrimental to marine wildlife, are not runoff-generating activities. It is not clear why the authors can conclude that the absence of in-water or beach activities will preclude impacts from runoff.

Responses

F4-2

Updated information citing articles with Balazc as a co-author have been included and incorporated into the body of the text in sections 6.10 and 8.10. These articles include those by primary authors Work, Polovina, Zug, and Brill. Recovery plans have been reviewed for sea turtles.

F4-3

Text has been changed to clarify runoff analysis.

Comments

F4-4 b) In Figure 3-13, DMR's portion of the SBCT marine ROI is not reflected on this map. It appears to only address the Pohakuloa marine portion of the ROI.

F4-5 4) Kahuku Training Area: The activities taking place in that the KTA include aviation training and troop movements (p. 7-3). To the extent that they are over water or produce runoff, these activities may have noise, visual, and runoff impacts to marine resources similar to those identified in the DMR analysis. KTA extends almost to the ocean, suggesting that such impacts could be feasible. In addition, the marine waters adjacent to KTA are part of the HIHWNMS and known to be frequented by humpback whales and other cetaceans. Despite this potential for impacts, the Region of Influence for KTA appears to be limited to terrestrial areas. The analysis needs an explanation of why the ROI does not include the marine environment given the potential impacts above and, if the ROI is extended to include the marine environment, the extent of such impacts.

5) Pohakuloa Training Area

F4-6 a) The discussion of activities to be undertaken in the Proposed Action (pp. 8-1 to 8-5) does not include any kind of marine-based activity, despite the fact that marine biological impacts are analyzed in later sections. Subsequent sections (e.g., pp. 8-148 and 8-149) discuss harbor construction and construction of a fixed tactical tower at the harbor. These and other activities with the potential to impact marine resources (e.g., vessel transport) should be discussed explicitly in the section on proposed activities.

F4-7 b) P. 8-130, Marine Wildlife, second paragraph: the first sentence should read, "Of these ESA-listed species, the most likely occurrences in the ROI...". Since that sentence discusses turtles as well as mammals, the reference to "marine mammals" should be replaced with "species".

F4-8 c) P. 8-148, first full paragraph, last sentence: the fact that animals are habituated to the type of noise produced by logistical support vessels (LSVs) and barges and therefore unaffected is not a valid rationale for presuming that impacts are negligible. The fact of habituation suggests a change to behavior, which is a "take" under the Endangered Species Act and Marine Mammal Protection Act and therefore prohibited without further consideration and consultation.

F4-9 d) The discussion of runoff impacts (p. 8-149) is inadequate. Given that harbor construction will take place, there should be a discussion of controlling erosion and reducing turbidity to minimize effects on marine wildlife.

F4-10 e) While it is true that monk seals typically have not hauled out in Kawaihae Harbor area, two seals are known to have lived in or visited the North Kohala area in the

Responses

F4-4
Figure has been changed per comment

F4-5
The ROI does not include any marine habitat. While the waters adjacent to KTA are part of the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS), no project actions occur in this area nor in the vicinity of the coastline, in the nearshore, or in the offshore marine habitat, or upland from the nearshore marine habitat. This has now been noted in the document.

F4-6
Text has been added to clarify PTA actions and to address the tactical tower construction. Text has also been added to the EIS to state that any harbor construction would be addressed under separate NEPA documentation as it is not part of this project action.

F4-7
The text has been changed.

F4-8
Text has been changed to incorporate input from this comment.

F4-9
Text has been changed to address this comment.

F4-10
Text has been changed to incorporate input from this comment.

Comments

F4-10 cont'd

past year. As such, the likelihood of impact of the proposed activities should take into account the likelihood, nature, and extent of impact to Hawaiian monk seals.

F4-11

f) Please be aware that any vessel-cetacean interactions should, as a matter of policy, be reported to our office as soon as they occur.

Once again, NOAA Fisheries appreciates the opportunity to provide comments on the DEIS. Please do not hesitate to contact our office to discuss these comments further.

Sincerely,

Margaret Akamine, Protected Resources Division
National Marine Fisheries Service
Pacific Islands Regional Office

Responses

F4-11

Thank you for your comment. This has been considered and your comment will be added to our administrative record.

Letter F5

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1111 Jackson Street, Suite 520, Oakland, CA 94607-4807
Phone: (510) 817-1477
Fax: (510) 419-0177

January 5, 2003

ER: 03/832

Ms. Cindy Barger
U.S. Army Corps of Engineers, Honolulu District
Building 230, CEPOH-PP-E
Ft. Shafter, Hawaii 96858-5440

Subject: Review of Draft Environmental Impact Statement on Transformation of the 2nd Brigade, 25th Infantry Division (Light) to a Stryker Brigade Combat Team in Hawaii

Dear Ms. Barger:

Please disregard the U.S. Department of the Interior's (Department) no comment letter dated December 30, 2003 on the Draft Environmental Impact Statement (DEIS) for the Transformation of the 2nd Brigade, 25th Infantry Division to a Stryker Brigade Combat Team (SBCT) in Hawaii. The Department has comments, which are provided in an attachment to this letter.

The proposed action, as we understand, is to convert personnel and equipment of the existing 25th Infantry Division to a SBCT. This would require use of new types of equipment and new and expanded training facilities. A characteristic feature of the SBCT is the use of 20-ton, eight-wheeled "Stryker" vehicles to transport personnel and equipment.

Army training activities in the SBCT format are anticipated at various locations on the islands of Oahu and Hawaii. Twenty-eight individual projects identified and discussed in the DEIS would provide infrastructure such as dedicated roadways, communications support, and various types of training grounds.

The proposed action is a component of a larger plan to transform the U.S. Army (Army) as a whole. In concept, the nationwide transformation plan is to convert much of the Army to a "medium weight" format that allows troops to be quickly sent to areas of conflict anywhere on the globe and be highly mobile once they are in place.

We presume you are aware that the Fish and Wildlife Service (Service) is also investigating and reporting to the Army under the Fish and Wildlife Coordination Act on potential impacts to fish

and wildlife resources for certain Army transformation actions that may impact aquatic resources. In addition, Army consultation with the Service pursuant to section 7 of the Endangered Species Act (ESA) has been completed for routine and SBCT training on Oahu and is nearly complete for routine and SBCT training on the island of Hawaii.

We recognize the critical importance of maintaining a trained, modern national defense force. The Army and the Department have cooperated in numerous mutually beneficial programs to meet military needs while also achieving natural resource protection goals, in Hawaii and across the Nation. We believe mutual success is possible in this effort, and we hope that our comments will help you address our concerns.

Thank you for our opportunity to comment on this document. Questions may be directed to Gina Shultz, Acting Field Supervisor in our Fish and Wildlife Service office in Honolulu, Hawaii, at (808)792-9400.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

Enclosure

cc:
Director, OEPC, D.C.
FWS, Portland
USEPA - Region IX, Honolulu
NMFS - PIRO, Honolulu
CZMP, Honolulu
CWB, Honolulu
DAR, Honolulu
DOFAW, Honolulu

Comments

ATTACHMENT. Comments from Department of the Interior, pertaining to the Draft Environmental Impact Statement for Transformation of the 2nd Brigade, 25th Infantry Division to a Stryker Brigade Combat Team in Hawaii.

General Comments

Level of Detail and Level of Assurances: The proposed action, effects, and mitigation measures are often described in general terms, and without important detail. Although the DEIS anticipates a number of effects would be significant and identifies measures to reduce these effects to less than significant levels, assurances that these measures will be implemented are not always clear. In several cases, mitigation measures are described as being under consideration.

In the case of construction-related soil erosion and surface water quality effects, for example, it appears your control and mitigation measures would be successful in reducing effects to less than significant, and that assurances for implementation will be provided through the permitting and certification procedures of the Clean Water Act and other regulatory mechanisms.

F5-1

Soil erosion and the resulting water quality effects from non-construction training activities, however, could be significant in geographic extent. Unlike construction impacts which are temporary, erosion from training would be ongoing. Preventing eroded soil from entering and degrading waterways would require a commitment of resources and effort, yet measures described in the DEIS are essentially voluntary. Including greater detail in the Final Environmental Impact Statement (FEIS), as well as formal mechanisms for implementing mitigation measures, would overcome these concerns.

ESA, Critical Habitat: It appears that outdated information was used in the analysis relating to the amount of critical habitat reported for the palila and Oahu elepaio, and we ask that this be rectified in the FEIS. This is also the case for plants, perhaps because critical habitat designations were only recently completed. Critical habitat was designated for 99 plant species on Oahu, on June 17, 2003, and for 41 plant species on the island of Hawaii, on July 7, 2003.

F5-2

The Army did send out an errata sheet dated October 3, 2003, to indicate that all discussion of plant critical habitat in the DEIS was in error because it was based upon previously "proposed" critical habitat boundaries, rather than upon the final geographic designations.

We are concerned, however, because the errata sheet notes that the majority of Army lands were excluded from the final critical habitat designation. This could lead some to interpret that these lands are less important for recovery of the listed species.

In fact, Army lands were excluded from critical habitat based upon a rationale that recognizes, and even emphasizes, the essential contribution that Army-led natural resource conservation actions play in the recovery of threatened and endangered species. These contributions include ongoing and proposed management actions specified in Integrated Natural Resource Management Plans (INRMPs) and other natural resource conservation programs.

We ask that the FEIS describe how the actions identified in the relevant INRMPs will be used by the Army to make this essential contribution to the recovery of listed species. In addition, there is

Responses

F5-1

Mitigation measures likely to occur are outlined in the Executive Summary. These proposed mitigation measures were included for public comment. The Army reviewed the measures based on public comments and the benefits of each measure to reduce impacts. The Army has listed those mitigation measures that are high priority and those that are unlikely to occur because of limited resource, unfeasible or there are similar measures already in place. The ROD will indicate which mitigation measures will be implemented.

F5-2

We have updated our critical habitat information in the document and on the figures. Additionally, the text was changed to incorporate this response.

Comments

F5-2 cont'd plant critical habitat within the Region of Influence (ROI) of the proposed action outside of Army installation boundaries. We ask that the potential effects of the action to plant critical habitat throughout these areas also be described and assessed in the FEIS.

F5-3 ESA, Section 7 Consultation: As mentioned in our cover letter, the Service completed a Biological Opinion pursuant to section 7 of the ESA, dated October 23, 2003, for routine and transformation training actions at six Oahu Army installations. A second BO assessing routine and transformation training activities at the Pohakuloa Training Area on Hawaii will be completed in December 2003. We ask that information from the BOs be incorporated into the FEIS.

F5-4 ESA, Recovery Plans: Recovery plans for ESA listed species are available for the relevant species indicated below, and can be obtained by contacting the Service Office in Honolulu, at (808)792-9400. Recovery plans summarize threats to the species, discuss their needs and recovery strategies, and prescribe management actions that should be used when assessing effects to the species in the DEIS.

Hawaiian Duck, Hawaiian Stilt, Hawaiian Coot, and Hawaiian Common Moorhen - Draft Revised Recovery Plan for Hawaiian Waterbirds, Second Revision. (1999)

Oahu Elepaio, Oahu Creeper, Palila, and Akiapolaau - Draft Revised Recovery Plan for Hawaiian Forest Birds. (1983)

Dark-rumped Petrel - Hawaiian Dark-rumped Petrel and Newell's Manx Shearwater - Recovery Plan. (2003)

F5-5 Discussion of Installations: There may be some advantage to combining the analyses and discussions of potential impacts to Kahuku Training Area (KTA), Kawailoa Training Area (KLOA,) and Drum Road. However, the presentation of the information pertaining to these facilities is confusing. In some instances, the discussion refers to KTA alone, and elsewhere, it appears KTA, KLOA, and possibly Drum Road are being referenced together.

Kahuku Training Area and KLOA are geographically, physiographically, and administratively distinct, and analyses of environmental impacts to these areas should reflect their unique characteristics. For clarity, we recommend that discussion of these two installations be completely separated throughout the FEIS.

With regard to KTA and KLOA, the tables that illustrate transformation alternatives (e.g., Table 2-5), and impacts (e.g.,Tables 4-8 and 4-10), are inconsistent and unclear. In some tables, information for KLOA is presented separately, in some tables it is combined with KTA, and in other tables KLOA is omitted entirely. This makes interpretation of the information on KLOA difficult and confusing, and we recommend that tables present information for each installation in separate columns.

F5-6 Antennas and Migratory Birds: The DEIS states in several sections that "the construction and subsequent presence of fixed tactical Internet (FTI) antennas would not significantly affect migratory birds...," though sufficient information to support this conclusion is not provided.

Responses

F5-3
Biological Opinion information has been incorporated into the EIS as requested.

F5-4
Thank you for your comment. It has been considered and will be added to our administrative record.

F5-5
Because of the scope of the project the document was organized in such a way that community members can focus on issues that would most directly affect them The tables have been edited to make it clear that this is a summary of KTA and KLOA.

F5-6
Full descriptions of the antennas are given in Appendix D. Impacts to migratory birds are discussed fully in chapter 5.10, 6.10, 7.10, 8.10.

Comments

F5-6 cont'd

In continental North America, the species affected by antennas, towers, and other tall structures, are primarily land birds that migrate at night. In Hawaii, however, the primary species impacted by these structures are seabirds, during their diurnal movements between the sea and nesting areas. These species include wedge-tailed shearwater, dark-rumped petrel, Newell's shearwater, and Laysan albatross. Artificial lighting can attract and disorient seabirds, and they are known to become injured during collisions with antennas, towers, utility lines, and other structures.

The DEIS indicates that 25 new antennas are included as part of the proposed action. Five of these would be located in the State Conservation District, though no information is provided about their proposed locations, height, position relative to surrounding vegetation, or whether they will be guyed or lighted. This information is needed for a full assessment of the potential effects to federally protected migratory birds.

F5-7

Road Descriptions: Three major road-building projects are included as part of this action: the Dillingham Trail, the Schofield-Helemano Trail, and the Pohakuloa Training Area Trail. Taken together, these roads constitute one of the largest transportation infrastructure projects to be proposed in the State of Hawaii in many years. The DEIS describes the roads in terms of total acreage. We ask that the actual footprint (length and width) of the proposed road alignments also be included in descriptive presentations for these road projects. This will assist in understanding the associated effects of the road construction and operation.

F5-8

Definitions of Terms: We ask that technical military terms be defined or replaced with "plain" language. Examples of such terms include: strategic, tactical, strategic mobility, tactical mobility, training throughput, battlespace, increased lethality, etc.

Specific Comments

F5-9

Pg. 2-1, U.S.Army Hawaii Training Complex: The six major training areas are described adequately for this introductory section. Drum Road, however, which extends from Helemano Military Reservation (HMR) to KTA and traverses KLOA, is not thoroughly described. Drum Road is a critical component of the training infrastructure that is undergoing a major upgrade, under a parallel National Environmental Protection Act process.

We recommend that Drum Road be described in this section, and that the relationship between the Drum Road upgrade project and the Army transformation be described, because of the degree to which the outcome of the proposed transformation is contingent upon completion of the Drum Road upgrade.

This information is necessary in order to understand the anticipated direct and cumulative project-related impacts to fish and wildlife resources in the analysis of environmental consequences later in the document.

F5-10

Pg. 2-12, Figure 2-6: We recommend this illustration be revised in the FEIS to reflect changes in the "Stryker" maneuver area as established through the section 7 consultation process for these sites. Also, Puu Nohonaoahae and Puu Papapa are not maneuver areas, as indicated, and we suggest the figure be revised accordingly.

Responses

F5-7

Table 2-5 gives the length, width and composition of all roads. In addition Appendix D gives a more detailed description of each road project.

F5-8

Every effort was made to make the EIS reader friendly. Most military terms were replaced with "plain" language. Some are self explanatory. The FEIS has been reviewed to see if further changes in language could be made.

F5-9

Presently Drum Road is used for access to the Kahuku Training Area (KTA) and the Kawailoa Training Area (KLOA) during current force training activities. The existing road lacks proper drainage and safety measures such as guard-rails, barriers, and warning signs. In order to safely continue using Drum Road for current force training activities, the Army is proposing upgrades to the road, regardless of the final decisions on SBCT in Hawai'i. If the Army decides to transform to SBCT in Hawai'i, the Army would use Drum Road for access to the KTA and KLOA regions, as such the use of Drum Road is discussed in this EIS in Chapter 7. Since the proposed upgrade of Drum Road is a single and complete project separate for the proposed SBCT, the upgrade itself is discussed in Chapter 9 of this document in relation to cumulative impacts.

F5-10

This figure and similar figures for the other project areas were used in the Section 7 consultation process. Pu'u Nahonaoahe and Pu'u Pāpala are not maneuver areas and are shown in Yellow on the map as areas where no off road maneuvers are to occur.

Comments

F5-11 Pg. 2-17: The DEIS states that units are currently deployed from Pearl Harbor, Oahu, to Pohakaloa Training Area (PTA) via vessels that dock at Kawaihae Harbor, on the island of Hawaii. The vessels used are barges (4 round-trips per year) and logistic support vessels (LSVs, 60 round-trips per year). The number of LSV round-trips per year is expected to increase to 66. Any possible increases in barge round-trip traffic also needs to be specified.

The use of barges towed from Pearl Harbor to Kawaihae Harbor has the potential to result in the unintentional spread of alien marine species, which are abundant in Pearl Harbor.

We recommend that all barge hulls be periodically inspected and cleaned to assure that marine alien species that occur in Pearl Harbor are not transported to Kawaihae Harbor, especially if barge traffic is increased.

F5-12 Pg. 2-35, Mounted Maneuver Training: The DEIS includes the following statement: "Doctrine provides that the area of operations for which the SBCT could be responsible in combat is normally 31 miles by 31 miles." We recommend the policy document or other official statements that establish this geographic requirement be referenced.

This is important because all subsequent justification for land acquisition dedicated to SBCT training appears to be justified by this doctrine.

F5-13 Pg. 2-42, Implement an Environmental Management System (EMS): The description of an EMS to change environmental management practices under Army transformation is described in general terms. Without more detail, it is not clear what is meant by "systematic integration of environmental management into all missions, activities, and functions," in terms of the Army's four categories of environmental management (i.e., prevention, compliance, restoration, and conservation). We recommend that a more complete description of the proposed EMS integration be provided.

F5-14 Pg. 3-7, Drum Road: Drum Road is described as a dirt and gravel road. The current 'Improvements to Drum Road Upgrade Project' which proposes to substantially widen and pave the entire Drum Road alignment in a two-lane configuration, is not included in this description. The improvements achieved through this road upgrade affect and are directly related to the Army's ability to train the proposed SBCT.

As mentioned above, the relationship between the Drum Road Upgrade Project and the Army transformation should be described, particularly the degree to which they are interrelated and interdependent. This will facilitate a discussion in the Environmental Consequences Chapter on the direct and cumulative impacts of SBCT use of Drum Road.

F5-15 Pg. 3-60, Biological Resources, bullet 2: For consistency, we recommend listing the numbers of non-flowering plants and the evolutionary founders from which they are derived, as a separate bullet.

F5-16 Pg. 3-62, Figure 3-13: This figure illustrates ocean regions, but not inland aquatic habitats such as streams and wetlands. We recommend that an overview illustration that depicts all inland waters

Responses

F5-11
There will be no change in the number of barge trips under SBCT. There will be no change in the number of barge trips so no increase in the transport of alien species is anticipated. All vessels are periodically inspected and cleaned at the present time and no change is anticipated.
The total number of barge trips will increase by only six. All vessels are periodically inspected and cleaned at the present time and no change is anticipated. The spread of alien marine species is not expected to be significant. Section 8-10 Biological Resources describes impacts from spread of alien species. Significant but mitigable impacts are the result of vegetative species.

F5-12
The following reference has been added, (Nakata 2002b), Final Submittal Range and Training Land Program Development Plan.

F5-13
The EMS is being developed. While this will likely improve the conditions on Army lands, whether Transformation takes place or not, it was not considered as a mitigation measure for SBCT for that very reason. It is noted here as a program that will be implemented in the future.

F5-14
Page 3-7 is simply a discussion of existing facilities not proposed construction activities. The Drum Road improvements are not part of the Transformation project. The improvements are required for the current forces and as such a separate NEPA document has been prepared. However, the use of Drum Road by SBCT forces and the impacts of that use are described in the Transformation EIS. A discussion of the Drum Road Upgrade project can be found in Chapter 9 – Cumulative Impacts as Project 19 and is described as required for current mission requirements of the 2nd Brigade, 25th ID(L) and would be needed regardless of SBCT implementation.

F5-15
This text has been included.

F5-16
Noted and changed.

Comments

F5-16 cont'd of the ROI be developed, either as an addition to the marine waters shown on this figure, or with an additional map.

F5-17 Pg. 3-63, paragraph. 2: The DEIS characterizes the ROI as being "largely made up of disturbed areas, with minimal natural communities," and states "the vast majority of species inhabiting these areas are non-native." It is true that portions of the ROI are very disturbed and support mostly non-native species. Other portions of the ROI, however, contain some of the least disturbed natural communities left in Hawaii and are home to a large number of unique and imperiled native species and the ecosystems that support them.

We recommend biological resources present in all portions of the ROI be described to allow assessment of potential effects to these resources.

F5-18 Pg. 3-65, paragraph 2: The stated extent of Oahu elepaio critical habitat in the ROI (1,147 acres) is not accurate. There are 1,913 acres of critical habitat at Schofield Barracks Military Reservation (SBMR); 2,266 acres at Schofield Barracks East Range (SBER); and 4,349 acres at KLOA. In Figure 3-13, which shows critical habitat in the ROI on Oahu, the area indicated as critical habitat for the Oahu elepaio is the current range of the Oahu elepaio, not actual designated critical habitat for the species.

We ask that this be corrected and that potential effects on elepaio designated critical habitats be assessed, taking this information into account.

F5-19 Pg. 3-65, paragraph 2; Critical Habitat, Fig. 3-15: Designated critical habitat for palila on the island of Hawaii is actually greater than what is shown in this figure. This causes us to question whether the area of palila critical habitat within the ROI is also inaccurate, and if not accurate, whether the full effects are accurately assessed. We ask that you ensure that the correct palila designated critical habitat information be used and also in the full environmental effects analysis.

F5-20 Pg. 4-7, Conversion of Agricultural Land to Training Land: The DEIS states that "the estimated 535 acres of pineapple land [which will be lost] is approximately 0.005 percent of the U.S. Department of Agriculture (USDA) designated agricultural land on Oahu..."

This statement cannot be correct because it would mean that there are 10,700,000 acres of USDA designated agricultural land on Oahu, an island that is only 388,000 acres in size. This statement should be corrected.

F5-21 Pg. 4-40, paragraph 1: The descriptions of roads crossed by the proposed Helemano Trail is not accurate. The text appears to be an inadvertent duplicate of pg. 4-40, paragraph 2.

We recommend inclusion of revised text indicating that the proposed Helemano Trail would cross Kaukonahua Road, Kamehameha Highway, and possibly Wilikina Drive (see pg. 4-40, paragraph 2).

F5-22 Pg. 4-46, Surface Water Quality; and pg. 4-52, Geology, Soils and Seismicity: Based upon the information provided in these two sections, it is difficult to understand the conclusion that impacts to surface water quality will be mitigated to less than significant levels. Section 4.9 (Geology,

Responses

F5-17
The text was changed to incorporate this request.

F5-18
The text was changed to incorporate this response.

F5-19
The corrections were made to this figure and these changes were evaluated in the impact analysis.

F5-20
Text revised to read, "The estimated 535 acres (219 hectares) of cultivated pineapple land is approximately 0.67 percent of the total USDA designated agricultural land on O'ahu and 2.8 percent of the total area in pineapple production in the state (Statistics of Hawai'i Agriculture 2004). Similar text on page 5-31 (last paragraph) will also be revised. Similar text on page 5-33, under the Reduced Land Acquisition Alternative revised to read, " The estimated 98 acres of cultivated pineapple land is 0.1 percent of the total USDA designated agricultural land on O'ahu and is 0.5 percent of the total area in pineapple production in the State (Statistics of Hawai'i Agriculture 2004).

F5-21
In the Final EIS, these sections has been revised with the correct crossings as noted.

F5-22
Erosion would not necessarily result in significant surface water impacts for several reasons. First, although we have concluded that the ITAM program may not be entirely successful in preventing significant erosion in the maneuver areas, it will nevertheless direct resources to reducing soil erosion, and it is expected to be successful in reducing the amount of erosion. The problem, as explained in the EIS, is lack of available land area to enable maneuver training to be moved to another range while the damaged land is allowed time to recover. Thus, erosion will continue and over time, the erosion damage will accumulate. However, this does not mean that the rate of erosion will be so high that it will result in significant impacts to water quality. Second, the erosion would occur in upland areas some distance from major stream channels, which provides space for implementing measures to slow runoff and precipitate sediment. Thus, although maneuvers are likely to

Comments

Soils and Seismicity) describes expected soil erosion due to training activities and concludes that erosion will be significant under the proposed action and may not be mitigable. This is due to increased intensity of use within limited maneuver areas, and due to an increase in the total amount of land subject to increased erosion-causing activities, particularly at SBMR, Dillingham Military Reservation (DMR), KTA, and KLOA.

Appendix M-2 depicts the Army Training and Testing Area Carrying Capacity (ATTACC) model output, which provides quantitative estimates of Maneuver Impact Miles (MIMs) resulting from training on Army lands. A basic goal of the transformation is to increase mobility of military personnel and equipment and it follows that training activities, as measured in these "impact mile" units would increase substantially.

Impact miles are anticipated to approximately double at DMR and KTA and undergo a sevenfold increase at PTA. Overall, model results indicate that MIMs will increase by a factor of three as a result of the training regimes anticipated under the proposed action.

F5-22 Despite the recognition that soil erosion will not be mitigable at any of the installations under the proposed action, the resulting impacts to water quality are described as mitigable through ongoing activities of the Integrated Training Areas Management (ITAM) program. The administrative and regulatory mitigation under ITAM appears to consist primarily of monitoring surface waters and possibly implementing unspecified mitigation measures in the event that sedimentation is found to be significantly elevated above background levels.

The DEIS describes this approach only for the case of a low precipitation, low run-off time period. The greater concern, and the more probable scenario with the anticipated increased soil disturbance under the proposed action, is that unpredictable but regular storm-associated run-off will be increasingly laden with sediment due to SBCT training activities. It is generally recognized that these occasional, large runoff events have a significant effect on environmental conditions in freshwater and marine environments and are a major influence of ambient surface water quality conditions.

Storm flows that carry large amounts of sediments would be expected to occur at all of the Oahu installations, even at DMR where there are no perennial streams but where intermittent drainages flow a very short distance to the sea. The marine waters adjacent to DMR are particularly vulnerable to impacts from erosion-derived sediments because of the presence of extensive areas of coral reef habitat.

Additionally, numerous perennial and intermittent streams originate in KTA and KLOA and flow across narrow coastal plains toward sensitive coastal receiving waters. Based upon the information provided in section 4.8 (and subsequent sections for each Oahu installation), it does not appear likely that impacts to surface water quality can be mitigated to less than significant levels so long as soil erosion is anticipated to be significant as described in section 4.9 (and subsequent sections for each Oahu installation).

Therefore, we recommend that the effect of anticipated levels of training-related erosion on surface water quality and impacts to aquatic and marine resources be re-assessed in the FEIS and that these impacts be considered significant unless specific, effective and enforceable mechanisms

Responses

disturb soils and remove vegetation, which will result in erosion, engineering controls can be placed outside of the maneuver areas to slow runoff and trap sediment within the installation boundary before it reaches the major stream channels. Third, an increase in erosion during periods of high rainfall would not necessarily translate to a significant impact on water quality because background concentrations of suspended sediment are high at these times. While we consider the erosion impacts to be mitigable to less than significant levels, the discussion of these impacts has been revised to provide the reader with a better understanding of the uncertainties involved and the rationales for considering the impacts to be mitigable. In addition, we have added further discussion of specific, effective and enforceable sediment control mechanisms to support these conclusions, as suggested in the comment.

Comments

F5-22 cont'd to control these impacts can be described and proposed for implementation with a high degree certainty.

F5-23 Pg. 4-60, paragraph 2: Please provide a citation and reference, and/or rationale for the use of an indirect impact analysis approach that uses a 60-meter radius to determine the extent of indirect affects to species and habitats.

F5-24 Pg. 4-62, Regulatory and Administrative Mitigation 1: For clarity, we suggest changing the first sentence to read: "The affects of SBCT actions on listed species in the ROIs have been evaluated in the section 7 consultation with USFWS. The Army will implement their project description, conservation measures, and terms and conditions as described in this consultation." This section also states that "Wildland Fire Management Plans (WFMPs) are being developed to minimize the probability of fire," and that "WFMPs and their mitigation value are described in section 4.12.3," but the treatment of WFMPs in section 4.12.3 provides only a brief description of fire management actions, and is not clear.

It is, therefore, difficult to assess whether the WFMPs will effectively minimize the impact of fires without more information about them and the actions they prescribe. It is our understanding that the WFMPs have been completed. If so, we recommend that their relevant aspects be presented and discussed in the DEIS so the anticipated potential impact of fire on fish and wildlife resources can be accurately assessed.

F5-25 Pg. 4-63, Regulatory and Administrative Mitigation 2: The DEIS states that "The Army is in Section 7 Consultations with the USFWS to ensure that the proposed action would not jeopardize the continued existence of federally listed species or adversely modify critical habitat." However, on pg. 4-63 (paragraph 1) the DEIS states that "it is not within the Army's ability to prevent and contain all fires."

The BO written by the Service as part of formal ESA section 7 consultation with the Army, indicates the risk of fire will be reduced outside of the intended impact area in order to minimize loss of elepaio and its habitat at SBMR. In addition, the efficacy of the WFMPs are to be formally reassessed after a period of five years.

We recommend the FEIS state that if it proves impossible to completely contain fires within the intended impact area, the Army will address this anticipated impact on critical habitat through the restoration of native forest suitable for elepaio.

F5-26 Pg. 4-64, Additional Mitigation 3: We suggest changing the first bullet to read "weed-free clothes and to maintain weed-free vehicles." Also, the section on spread of non-native species does not mention the brown tree snake, which is a serious threat to birds and the environment throughout Hawaii and the Pacific. We recommend that specific measures for preventing the introduction of the brown tree snake into Hawaii via military aircraft and ships from the Mariana Islands be identified in this section.

F5-27 Pg. 4-65, Threat to Migratory Birds: The DEIS states that "the construction and subsequent presence of FTI antennas would not significantly affect migratory birds species known to occur in the SBMR ROI," but no information is provided about the location, height, structural features and

Responses

F5-23
In the Final EIS the text was changed to incorporate this response. The 60-meter buffer applies only to the activities that take place on the vehicle trails.

F5-24
The discussions and mitigation measures in Section 4.10 have been revised to better address the impacts to biological resources from wildland fire. In addition, since publication of the Draft EIS, the Army has updated the IWFMP and has received biological opinions from USFWS of "no jeopardy" for the proposed action on the islands of O'ahu and Hawai'i. The Army has determined that the impacts to biological resources from wildland fires is significant. The mitigation measures including the implementation of the Biological Opinions and the updated IWFMP will substantially reduce the severity the impact but not to less than significant levels.

F5-25
All mitigation will be considered.

F5-26
The text was changed to incorporate this response.

F5-27
Full descriptions of the antennas are given in Appendix D. Impacts to migratory birds are discussed fully in chapter 5.10, 6.10, 7.10, 8.10. A brief discussion was incorporated into the text as requested.

Comments

F5-27 cont'd position of such antennas. We recommend the inclusion of this information because without it, the potential impact of the proposed antennae on migratory birds cannot be assessed.

F5-28 Pg. 5-138, Main Post: In addition to the sources for biological information cited in the text, we recommend the following sentence be included: "In addition, the Army's environmental division conducts routine monitoring and surveys for rare and listed plant species."

F5-29 Pg. 5-140, East Range: The description of the training area did not include the James Campbell National Wildlife Refuge as a bordering neighbor. We recommend the first sentence be changed to read "...Kahana Valley to the east, KLOA to the north, the Service's James Campbell National Wildlife Refuge and private agricultural..."

F5-30 Pg. 8-142, Pohakuloa Training Area (PTA): The DEIS notes that there will be construction needed to upgrade facilities to accommodate the SBCT. This construction is expected to bring equipment into Hawaii from foreign ports as well as other islands or subinstallations within Hawaii. There is no explanation of whether this equipment will arrive by aircraft or if ocean-going vessels would transport the equipment via Kawaihae Harbor.

Any increase in marine vessel traffic, especially barge traffic, will result in an increased likelihood that marine alien species would be introduced into Kawaihae Harbor. We recommend a description of transport procedures be added to the FEIS. Using this information, we also ask that you describe the effects of alien species introductions that could occur, as well as any offsetting measures or mitigation that will be employed.

F5-31 Pg. 5-145, Invertebrates: The DEIS describes native invertebrate species located on the main post area of the SBMR installation. Two additional species currently proposed for Federal listing as endangered (*Drosophila aglaia* and *Drosophila obatai*) are not included. We recommend the FEIS include the following information on these two picture-wing fly species:

- *Drosophila aglaia* was first collected in 1946 on Mount Kaala on the island of Oahu, and described by Elmo Hardy in 1965. *Drosophila aglaia* is known only from six localities in the Waianae Mountains of Oahu. It has been recorded on land owned by the State of Hawaii Department of Land and Natural Resources at Makaleha Valley, Peacock Flats Trail, and Puu Kaua. Additionally, this species is known from private land holdings at Palikea Ridge, Puu Kaua, and Kaluaa gulch, and is also found on Federal land owned by the Army at Puu Pane. The occurrence of *Drosophila aglaia* is restricted to the patchy distribution of its host plant, *Urera glabra*, a small endemic tree. The larvae of *Drosophila aglaia* develop in the bark and stem of *Urera glabra*. This tree does not form large stands, but is scattered throughout slopes and valley bottoms in mesic and wet forest habitat on all the main islands. In the Waianae Mountains on Oahu, this tree occurs infrequently in mesic forest. Because *Drosophila aglaia* is reliant on an infrequently occurring host plant, it is difficult to estimate the size of the land area on which this species occurs. Each site is probably less than several acres. The major threats to *Drosophila aglaia* are predation by ants and habitat degradation from feral ungulates, alien plants, and fire.

- *Drosophila obatai* was described by Elmo Hardy and Kenneth Kaneshiro in 1972, from specimens collected in the Waianae Mountains of Oahu. *Drosophila obatai* is restricted to

Responses

F5-28
The text was changed to incorporate this request

F5-29
The text was changed to incorporate this request.

F5-30
There is no significant increase in vessel traffic. Only 6 additional trips are scheduled per year, conducted in the same manner as existing vessel traffic. Therefore, this increase is not considered significant and additional risk of invasive species is negligible. There is no information available at this time regarding modes of transport therefore any discussion about alien species would be speculative.

F5-31
These species were added to Chapter 5 and to the Species descriptions in Appendix I.

Comments

F5-31 cont'd

the island of Oahu where it is known from State of Hawaii DLNR-owned land at Makaleha Valley in the Mokuleia Forest Reserve in the Waianae Mountains, and Wailupe Gulch located in the Honolulu Watershed Forest Reserve in the southern Koolau Mountains. This species is also known from Federal land owned by the Army at Puu Pane, and from city and county of Honolulu and private holdings at Waialae Nui. *Drosophila obatai* use *Pleomele forbesii* as a host plant (Montgomery 1975). This host plant, growing on slopes in dry forest and diverse mesic forest, occurs singly or in small clusters and does not form large stands of many individuals (Wagner *et al.* 1990). Threats to this Hawaiian picture-wing include habitat degradation from feral ungulates, alien weeds, and fire, and predation by ants and alien wasps.

These species are at risk of extinction due to natural and human-caused factors. These species are declining and are currently limited in their distribution to very small and isolated patches of habitat. The reasons for the picture-wing flies' decline, like many Hawaiian insects, are habitat degradation through the action of introduced ungulates, particularly feral pigs and goats; predation and parasitism by introduced wasps and ants; reduction of adequate food resources through the action of both feral ungulates and introduced weed species; and competition with introduced flies.

Due to this decline, the species are now more at-risk of extinction due to catastrophic events such as fire and hurricanes. All of the picture-wing flies have specialized breeding sites and require specific endemic host plants. A third of the flies' host plants are already listed as endangered and many others are already proposed or considered candidates for listing. Preservation of host plants in natural ecosystems is necessary for recovery of these flies.

We recommend that the FEIS describe that negative impacts to the flies' host plants and their habitat are a possible result of the proposed action and describe the means by which these impacts will be avoided or minimized.

F5-32

Pg. 5-145, Invertebrates: We request the FEIS include an increased commitment to conservation measures to minimize anticipated effects to rare Hawaiian tree snails at SBMR (and similarly at KLOA/KTA). Because the geographical extent of habitat occupied by these tree snails has declined substantially in the last several decades, we recommend that future surveys for the Oahu tree snails be exclusively focused on locating new occurrences of snails rather than be conducted as an add-on activity during other surveys.

Combining tree snail surveys with other objectives does not allow the time and intensity needed to adequately search and locate tree snails. In addition, field biologists familiar with tree snails and appropriate quantitative survey methodologies should be included with Army natural resource staff during field surveys. As mitigation for the potential effects of the proposed action, and loss of genetic diversity, we ask that the Army establish and support two or more captive populations for each known tree snail species found within the ROI, with oversight from tree snail experts that have successfully carried out captive propagation.

Responses

F5-32

All mitigation measures will be considered. Finalized mitigation will be set forth in the ROD.

Comments

F5-33

Pg. 5-149, Table 5-23: Two species within the ROI were not included in the Oahu section 7 consultation. We recommend that the Army determine the status and actual locations of *Lobelia niihauensis* and *Nototrichium humile* and determine whether or not they need to reinitiate section 7 consultation.

Pg. 5-158, paragraph 4: The BO for Routine and Transformation-related Training on Oahu outlines minimization measures to offset military training impacts to 37 listed plant species. For plant species that have less than three known populations in existence, or more than 50 percent of known individuals within one or more of the Oahu action area, the Army will "stabilize" that species. Stabilization measures include the following elements: 1) out-planting, 2) enhancing existing populations, and 3) reduction of threats to the species (e.g., feral ungulate removal, rodent control, and eradication of invasive plant species).

Out of the 37 listed plant species on Oahu installations, it was determined that 31 would be stabilized.

Although the BO concluded these effects would not jeopardize the continued existence of these plants, the effects are potentially significant. We recommend, therefore, that the FEIS incorporate an increased level of commitment and incorporate a similar suite of conservation actions for the remaining six plant species.

These efforts would need to be incorporated into ongoing management efforts in order to reduce anticipated impacts to these species resulting from training activities. Additional conservation measures could include increased rodent and invasive plant control, protection of endangered species from foot traffic and habitat restoration post wildfire event.

F5-34

In addition, we recommend the basic biological needs of these endangered plant species be studied in order to more effectively conserve and manage the species (i.e., sexual reproduction requirements, pollination and seed disbursal mechanisms; soil, light, and nutrient requirements; and seed storage and germination requirements) because many of these basic biological requirements are unknown.

We recommend that the Army use a phased approach to implementing training throughout the ROI. The Department encourages the Army to perform additional conservation measures to reduce impacts to plants to less than significant levels. For example, we recommend training begin only after some of the species-specific conservation actions are in place for the species most vulnerable to fire.

We suggest the Army not use highly incendiary munitions that have a medium to high likelihood of starting fires until species most vulnerable to fire have some conservation actions in place, particularly for those species that occur both in Makua and Oahu installations; or until the WFMP is fully implemented and Range Control has fully implemented the new Standard Operating Procedures established by this plan.

In addition, we encourage the Army to incorporate species of concern and other rare species and important habitat types within the ROI into these conservation efforts.

Responses

F5-33

The text was changed to incorporate this request. Impacts to individuals and populations of sensitive species and habitats are outlined in chapters 5.10, 6.10, 7.10 and 8.10

F5-34

All mitigation measures will be considered. Finalized mitigation will be set forth in the ROD.

Comments

Although critical habitat for plants was not designated on Army lands, critical habitat has been designated for species that occur within the ROI. We recommend that this critical habitat be monitored for impacts as a result of training activities, and, if detected, actions be taken to mitigate for them. For example, trails that are located in or adjacent to a critical habitat should be monitored for weed ingress and erosion.

F5-34 cont'd

We recommend that actions be implemented to manage lands in or adjacent to critical habitat, including invasive weed control, feral ungulate control, and planting associated native species. Critical habitat that occurs in lowland areas is at greater risk of impact from fires due to more xeric conditions (very dry), and higher non-native fuel load.

To minimize the threat of habitat loss due to fire in these areas, we recommend enhancing or establishing native habitats in the vicinity of listed species or critical habitat. This action will create natural buffers that will slow wildfires and help protect these sensitive areas.

Pg. 5-161, paragraph 1: The DEIS states that "firing and mortar points are located to ensure the maximum range of the weapon would not overshoot the impact area." However, the maximum range of many weapons used at SBMR is greater than the maximum distance within the intended impact area, and numerous rounds could land outside the intended impact area. These rounds regularly ignite fires outside the intended impact area, and the percussions from high-explosive rounds may kill listed species and negatively affect other biological resources.

F5-35

Natural resource management activities outside the intended impact area require an unexploded ordnance expert escort because of the presence of unexploded ordnance. We understand the firing points and maximum range of weapons used at SBMR do not preclude rounds landing outside the intended impact area, and that this occurs regularly. This is a significant impact, and no mitigation measures are proposed to minimize this impact.

We recommend that the risk of rounds landing outside the intended impact area be reduced by moving targets as far away as possible from the borders of potential listed species habitats, or by reducing propellant charge in weapons used for training at this location.

Pg. 5-161, paragraph 3: The DEIS states that "there is no assurance that fires or other threats associated with the proposed action would not reach or otherwise threaten populations of listed species within the SBMR ROI." The DEIS states later, however, on page 5-162, bullet 5, that "section 7 consultation and regulatory and administrative mitigations...would help reduce the impact to a less than significant level."

F5-36

As described in our comments above, it is not possible to assess whether the WFMP or other mitigation actions will be effective or sufficient without more information about the nature of those actions. If fires continue to affect Oahu elepaio at SBMR, the long-term persistence of the elepaio population is threatened.

We recommend the FEIS more fully describe the measures derived from the consultation process and other means that will be implemented to reduce impacts to less than significant levels.

F5-37 Pg. 5-162, Regulatory and Administrative Mitigation 1: We recommend these standards and

Responses

F5-35

While it is true that the maximum range of many weapons may exceed the impact area on some ranges, the charges for the munitions used on those ranges are reduced to avoid rounds landing outside the impact areas. Therefore the chances of a round landing outside the impact area are very small. All ranges have a designated safety zone as well. The safety zone are set so that the odds of a round landing outside this zone are, statistically, one in a million. This has been determined to be a less than significant impact so no mitigation is necessary.

F5-36

Text was changed to incorporate this request.

F5-37

The text was changed to incorporate this request.

Comments

F5-37 cont'd | measures need to be checked to reflect the most current language in the final BO.

F5-38 | Pg. 5-162, Additional Mitigation 1, second bullet: We recommend changing the text to read "Replanting any area that is damaged by fires with appropriate native plants (if native plants are not available, plants known to be invasive or noxious will not be used)."

F5-39 | Pg. 5-163, paragraph 1: The DEIS states that "twenty elepaios have been identified within the SBMR ROI." The actual number of elepaio estimated to occur within the SBMR ROI is 340 (VanderWerf et al. 2001), indicating that the potential Transformation-related impact to elepaio is much greater than what is described in the DEIS. We recommend that the impact analysis be based on the estimate of 340 elepaios.

F5-40 | Pg. 5-163 paragraph 4: In the third line from the end of the paragraph, it is indicated that cars are the only vector for non-native invasive species. Because this is not the case, we recommend that the word "cars" be changed to "equipment" in order to be more accurate.

F5-41 | Pg. 5-164, last paragraph: We recommend that "as a result of Transformation activities" be added to the end of the second sentence to read as follows: "However, note that no new impact areas would be created in conjunction with the proposed action, and the population of feral ungulates and other alien mammals is not expected to increase as a result of transformation activities."

F5-42 | Pg. 5-166, Additional Mitigation 3: We recommend this section be changed to reflect the most current language in the BO.

F5-43 | Pg. 5-167, paragraph 3: For consistency, we recommend this paragraph be edited to read: " All sensitive plant species are at risk from trampling, particularly *Delissia subcordata*, aupaka (*Isodendrion longifolium*), and ulihi (*Phyllostegia hirsuta*) (Gomez 2003), though this risk is low."

F5-44 | Pg. 5-168, paragraph 3: We recommend the following species be added to the list of special status species: *Cyanea calcynia, Cyrtandra viridiflora, Doodia lyonii, Lobelia hypoleuca*, and *Platydesma cornuta* var. *cornuta*.

F5-45 | Pg. 5-174, Loss and Degradation of Sensitive Species and Habitat, third sentence: We recommend inserting the word "special" to read "species of special concern."

F5-46 | Pg. 6-69, Recovery Plan: There are no current occurrences of listed plant species at DMR, and the reference to unspecified listed plant species should be removed. We recommend the paragraph be changed to read: "Two animal species with recovery plans are known to occur within the DMR ROI." These species are listed in Appendix I-1a of the DEIS.

F5-47 | Pg. 6-84, paragraph 2: This paragraph does not reflect the same final action that was agreed upon between the Army and the Service, and described in the final BOs for Routine and Transformation-related training. We assume the completed BOs will be referenced to incorporate the geographical extent of the finalized action areas for the purpose of finalizing the ROIs in the

Responses

F5-38
The impacts to sensitive species was changed to significant after further evaluation. The ITAM program, which will continue to be used under the proposed action includes a goal of planting native plants where possible. However, because success of the planting depends on location, soil condition and water, survival cannot be guaranteed. While this and other measure will significantly reduce the impacts they will not be reduced to less than significant.

F5-39
The text was changed to incorporate this request.

F5-40
The wording has been changed to the "movement of troops and equipment".

F5-41
The text was changed to incorporate this request.

F5-42
The text was changed to incorporate this request.

F5-43
The text was changed to incorporate this request.

F5-44
The text was changed to incorporate this request.

F5-45
The text was changed to incorporate this request.

F5-46
The text was changed to incorporate this request.

F5-47
The text was changed to incorporate this request.

Comments

FEIS.

F5-48 Pg. 6-87, Significant but Mitigable to Less than Significant Impacts, Impact 1: Impacts from fires on sensitive species and habitat: We recommend pyrotechnics and non-live fire training be identified as potential sources of ignition, and than you describe the associated mitigation.

F5-49 Pg. 6-89, bullet 1: We recommend the date of completion of the WFMP be included in this section.

F5-50 Pg. 7-82, paragraph 1: The DEIS states in the Sensitive Wildlife Species section that "the latest USFWS and survey information on sensitive species and habitat in the SBCT ROI has been incorporated into this evaluation of biological resources."

This is not the case in several instances in the description of the current status of sensitive species and habitat in the DEIS. For example, the DEIS under-represents the population size of Oahu elepaio and the amount of elepaio designated critical habitat within the SBCT ROI. We recommend that the latest information from the Service be used in the analysis.

F5-51 Pg. 7-88, Critical Habitat: The DEIS correctly states that "there is no federally designated or proposed critical habitat for wildlife within the KTA ROI," though the DEIS does not mention that 4,449 acres within the KLOA ROI are designated as critical habitat for the Oahu elepaio. In chapter 7 of the DEIS, numerous sections discuss resources and impacts in the KTA ROI, but similar discussion of the KLOA ROI is absent, or are confusing.

We recommend incorporation of this important information into a discussion relevant to the KLOA ROI.

F5-52 Pg. 7-94, paragraph 2: We recommend non-live-fire training and the use of pyrotechnics be identified as potential sources of ignition, and the inclusion of these sources in the analysis of impacts.

F5-53 Pg. 7-99, paragraph 1: We recommend the use of pyrotechnics and non-live-fire training be addressed in the analysis of impacts.

F5-54 Pg. 8-118, paragraph 2: We recommend this discussion reference the State's noxious weed list (http://www.hawaiiag.org/hdoa/adminrules/AR-68.pdf) and note which weeds occur at PTA. Also, please note that Russian thistle is listed as a State noxious weed and is, therefore, regulated under State laws.

F5-55 Pg. 8-118, paragraph 3 and 4: Although the DEIS recognizes the presence of feral ungulates, rats, and mice at the site, we recommend that a discussion of proposed methods to control these animals be incorporated into these descriptions.

F5-56 Pg. 8-118, Terrestrial Mammals: The DEIS states that "the Hawaiian hoary bat could occur on PTA." Surveys have shown that the Hawaiian hoary bat is known to occur on PTA (Jacobs

Responses

F5-48
The text was changed to incorporate this request.

F5-49
The text was changed to incorporate this request.

F5-50
Updated information provided by the Service was used to revise the FEIS.

F5-51
The text was changed to incorporate this request.

F5-52
The text was changed to incorporate this request.

F5-53
The text was changed to incorporate this request.

F5-54
The text was revised.

F5-55
The text was changed to incorporate this request.

F5-56
The text was changed to incorporate this request.

Comments

F5-56 cont'd 1994). We recommend that the status of the bat be corrected.

F5-57 Pg. 8-118, Birds: This section of the DEIS does not mention the federally endangered dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*), which is known to occur at PTA. The petrel is included in other portions of Chapter 8 of the DEIS and we recommend identification and incorporation of this species into the analysis of impacts.

F5-58 Pg. 8-119, Invertebrates: We recommend relocating the sentence regarding three endemic caterpillar species, to avoid confusion. We also recommend dividing this section into two paragraphs that describe native and introduced species separately.

F5-59 Pg. 8-134, Figure 8-30: We recommend including a discussion of why Army properties were excluded from critical habitat designation (i.e., the INRMPs for Army installations on the islands of Oahu and Hawaii complement and support recovery goals, thereby providing conservation benefits to listed species).

F5-60 Pg. 8-140, bullet 3: *Additional Mitigation 1*. "Replanting any area damaged by fires with plants similar to those destroyed," should be changed to "Replanting any area damaged by fire with appropriate native plants" to be more consistent with *Additional Mitigation 3*, bullet 2 on page 4-64 and *Additional Mitigation 4*, bullet 1 and bullet 3 on page 4-65.

F5-61 Pg. 8-141, paragraph 2: This paragraph understates the extent of detrimental impact of the proposed action on listed plants. Battle Area Complex construction, for example, will destroy the easternmost population of *Haplostachys haplostachya*, significantly reducing the distribution of this species. We recommend incorporating that information into this discussion.

F5-62 Pg. 8-142, Pohakuloa Training Area : The DEIS notes that there will be construction needed to upgrade facilities to accommodate the SBCT. This construction is expected to bring equipment into Hawaii from foreign ports as well as other islands or subinstallations within Hawaii. There is no explanation of whether this equipment will arrive by aircraft or if ocean-going vessels would transport the equipment via Kawaihae Harbor. Any increase in marine vessel traffic, especially barge traffic, will result in an increased likelihood that marine alien species would be introduced into Kawaihae Harbor.

This is particularly true if the vessel is originating from Pearl Harbor. We recommend a description of transport procedures be added to the FEIS. Using this information, we also ask that you describe the potential for alien species introductions to occur, as well as any offsetting measures or mitigation that will be employed.

F5-63 Pg. 8-147, Threat to Migratory Birds: The DEIS states that the construction and subsequent presence of FTI antennas would not significantly affect migratory bird species known to occur in the SBMR ROI, though the DEIS does not mention the potential effect of antennas on the endangered dark-rumped petrel at PTA. We recommend the potential impact to the petrel from antennas and towers that will be constructed at PTA, as well as other installations involved in this action, be assessed and reported.

Responses

F5-57
The text was changed to incorporate this request.

F5-58
The text was changed to incorporate this request.

F5-59
The text was changed to incorporate this request.

F5-60
The text was changed to incorporate this request.

F5-61
The text was changed to incorporate this request.

F5-62
There is no significant increase in vessel traffic. Only 6 additional trips will occur per year. Therefore, this increase is not considered significant and additional risk of invasive species is negligible.

F5-63
The text was changed to incorporate this request. A full description of the antennas is located in Appendix D, however, in general they are no taller than 10 feet and will be mounted on already existing structures where available.

Comments

F5-64 Pg. 9-2, Critical Habitat: Final critical habitat has been identified, though an analysis of transformation-related actions in areas of critical habitat is not included in the DEIS. We recommend this section include an analysis of cumulative effects to critical habitat as designated for plants and bird species.

F5-65 Pg. 9-31, Water Resources, paragraph 1 and 2: This description recognizes the potential cumulative impacts to surface water quality both within the project area due to training activities and throughout adjacent watersheds. However, the discussion does not present a thorough description of how these impacts will be mitigated to less than significant levels as described in Table 9-3. The discussion recognizes that some watersheds adjacent to the ROI are undergoing development of Total Maximum Daily Load-related water quality improvement requirements, because they are already demonstrably impaired as indicated by their consistently exceeding State water quality standards.

We recommend that cumulative impacts be considered significant unless soil erosion, as predicted by ATTACC modeling and/or other analysis methods, can be directed away from surface waters with well-defined and enforceable erosion control measures.

F5-66 Appendix I-1, pg. I-1-2: The Service recently released a Draft Revised Recovery Plan for Hawaiian Forest Birds (August 2003), which includes the Oahu elepaio, a species found at SBMR on Oahu; and the palila and akiapolaau, which are found at PTA. We recommend the appendix specifically reference the recovery plan.

F5-67 Appendix I-1, pg. I-1-23 *Chasiempis sandwichensis ibidis*: The information about the status of elepaio at SBMR is not accurate. As stated previously, approximately 340 elepaio are known from SBMR (VanderWerf et al. 2001), or 15% of the total population, a value not mentioned in the DEIS. Also, SBMR is not in the southern Waianae area, Puu Hapapa is not in SBER, and elepaio are not currently known from the Schofield-Waikane Trail. We ask that you reassess the potential impacts to the elepaio, and that the results be incorporated into the FEIS.

Additional Comments

The following comments address typographical errors, table formatting and content, and other less substantive items. Although repetitive, we also include corrections to many of the references to plant critical habitat throughout the document.

F5-68 Pg. 3-63, Resource Overview: The numbers of listed species should read "381 listed species, including 88 animals and 293 plants."

F5-69 Pg. 3-65, paragraph 2: Critical habitat boundaries for listed Hawaiian plants are now in their final form. We recommend the final geographical data sets be used in the analysis. This comment applies to all references in the DEIS to "proposed" plant critical habitats. The FEIS should analyze impacts from transformation-related training based on final plant critical habitat.

F5-70 Pg. 3-66, Figure 3-14: The figure title should read "Overview of Federally Designated Critical

Responses

F5-64
Information on the designation on final critical habitat has been included in the document and was considered in the Army's analysis of impacts on biological resources. Please see Sections 4.10, 5.10, 6.10, 7.10, and 8.10 for a discussion of impact on Biological Resources.

F5-65
After further analysis the Army has changed the impact analysis on soil loss to significant. Although the mitigation measure described in Section 4.9 will reduce the impacts considerably they will not reduce them to less than significant. However, as discussed most of this soil loss will be from dust erosion the measures to be implemented (described below) will reduce soil erosion from other causes to less then significant and would minimize erosion into surface waters. Therefore the impact to surface water quality due to soil erosion is still considered less than significant. The mitigation measures that will be put in place include: The Army will develop and implement a Dust and Soils Management and Monitoring Plan (DuSMMoP) for the training area. The plan will address measures such as, but not limited to, restrictions on the timing or type of training during high risk conditions, vegetation monitoring, soil monitoring, and buffer zones to minimize dust emissions in populated areas. The plan will determine how training will occur in order to keep fugitive dust emissions below CAA standards for PM10 and soil erosion and compaction to a minimum. The Army will monitor the impacts of training activities to ensure that emissions stay within the acceptable ranges as predicted and environmental problems do not result from excessive soil erosion or compaction. The plan will also define contingency measures to mitigate the impacts of training activities which exceed the acceptable ranges for dust emissions or soil compaction.
The Army will implement land management practices and procedures described in the ITAM annual work plan to reduce erosion impacts (US Army Hawai'i 2001a). Currently these measures include: implementation of a training requirement integration (TRI) program; implementation of an Integrated Training Area Management (ITAM) program; Sustainable Range Awareness (SRA) program; development and enforcement of range regulations; implementation of an Erosion and Sediment Control Management Plan; coordinating with other participants in the Ko'olau Mountains Watershed Partnership (KMWP); and continued implementation of land rehabilitation projects, as needed, within the Land Rehabilitation and Maintenance (LRAM) program. Examples of current LRAM activities at

Comments

F5-70 cont'd Habitat on Oahu." In addition, we recommend that the figure legend be updated to indicate 55,040 acres of final plant critical habitat.

F5-71 Pg. 4-61, Significant Impacts, Impact 1: The last sentence should be changed to include SBER and read: "The combined impacts of fire at PTA, SBMR, and KTA (where live-fire is proposed) and KLOA, SBER, and DMR (where non-live-fire training is proposed)..."

F5-72 Pg. 4-61, Significant Impacts, Impact 1: The last sentence should be changed to include SBER and read: "The combined impacts of fire at PTA, SBMR, and KTA (where live-fire is proposed) and KLOA, SBER, and DMR (where non-live-fire training is proposed)..."

F5-73 Pg. 5-148, Sensitive Habitats, Critical Habitat: As described above, the acreage given in the DEIS as critical habitat for the Oahu elepaio is not accurate. In Figure 5-37 the area marked as elepaio critical habitat represents the current range of the elepaio. The designated critical habitat area for elepaio is considerably larger in size and we recommend that it be clearly identified. As mentioned previously, Oahu plant critical habitat has been established in its final form. We recommend that the incorrect figure of 4,554 acres be corrected to 180 acres for 12 plants.

F5-74 Pg. 5-148, Sensitive Plant Species: We recommend that the number of sensitive plant species identified in the DEIS be changed from 59 to 57 to reflect the most current information. Also, the second sentence should be changed to read: "The USFWS has also designated critical habitat for areas within the SBMR ROI."

F5-75 Pg. 5-149, Table 5-23: We offer the following recommendations for this table:

- Remove the words "or Potentially Occurring" from the title; all occurrences have been confirmed.
- A notation of critical habitat should be indicated for the following species: *Abutilon sandwicense*, *Delissea subcordata*, *Flueggea neowawraea*, *Hesperomannia arborescens*, *Isodendrion longifolium*, *Nototrichium humile*, and *Phyllostegia kaalaensis*.
- The "dates last observed" for *Abutilon sandwicense* and *Alsinidendron trinerve* should be changed from unknown to 2003, and the U should be changed to C (see Army database);
- The Federal status of *Bobea sandwicwensis* should be changed from "-" to SOC;
- *C. calcunia*: this line appears to be a typographic error and should be removed;
- *C. lanceolata* ssp. *calcynia* should be inserted after *C. koolauensis* with the common name Haha, Federal status C, state/global status -/G1, date last observed 1999, and likelihood of occurrence C;
- *Cyanea membranacea* should be inserted after *C. lanceolata* ssp. *calcynia* with the common name Haha, Federal status SOC, state/global status -/G2, date last observed 1992, and likelihood of occurrence C;
- *Dissochondrus biflorus* likelihood of occurrence should be changed from P to C;
- *Doodia lyonii* should be inserted after *Dissochondrus biflorus* with the common name NCN, Federal status SOC, state/global status -/G1, date last observed 1993 and likelihood of occurrence C;
- *Dubautia sherffiana* likelihood of occurrence P should be changed to C;

Responses

projects involving site preparation, liming, fertilization, seeding or hydroseeding, planting trees, irrigation, and mulching; a combat trail maintenance program (CTP); coordination through the Troop Construction Coordination Committee (TCCC) on road maintenance projects; and development of mapping and GIS tools for identifying and tracking progress of mitigation measures.

F5-66
Updated information provided by the Service was used in revisions to the EIS.

F5-67
This information has been revised in the text.

F5-68
The text was changed to incorporate this request.

F5-69
The text was changed to incorporate this response.

F5-70
Corrected to show critical habitat in the ROI.

F5-71
The text was changed to incorporate this request

F5-72
The text was changed to incorporate this request.

F5-73
The figure was changed to incorporate this response.

F5-74
The text was changed to incorporate this request.

F5-75
The text was changed to incorporate this request, however, the title of the table was not changed to remain consistent with the tables in other sections of the document.

Comments

F5-75 cont'd

- *Exocarpos gaudichaudii* likelihood of occurrence P should be changed to C;
- *Hesperomannia arborescens* likelihood of occurrence P should be changed to C;
- *Joinvillea ascendens* ssp. *ascendens* should be inserted after *Isodendrion longifolium* with the common name Ohe, Federal status C, state/global status -/G5, date last observed 1999 and likelihood of occurrence C;
- *Labordia kaalae* likelihood of occurrence P should be changed to C;
- *Lipochaeta lobata* var. *leptophylla* should be removed entirely as it does not occur within the ROI;
- *Lipochaeta tenuis* likelihood of occurrence P should be changed to C;
- *Lobelia oahuensis* should be removed entirely as it does not occur within the ROI;
- *Lobelia hypoleuca* Federal status should be changed from "-" to SOC;
- *Lobelia yuccoies* should be inserted after *Lobelia hypoleuca* with the common name Panaunau/-, Federal status SOC, date last observed 1995 and likelihood of occurrence C;
- *Melicope christophersonii* should be inserted after *Lobelia yuccoies* with the common name Alani/-, Federal status C, date last observed 1997, and likelihood of occurrence C;
- *Melicope cinera* likelihood of occurrence P should be changed to C;
- *Melicope sandwicensis* should be inserted after *Melicope christophersonii* with the common name Alani/-, Federal status SOC, date last observed 1993, and likelihood of occurrence C;
- *Neraudia angulata* var. *angulata* and *Nothocestrum latifolium* should be removed entirely this species does not occur within the ROI;
- *Nototrichium humile* should be inserted after *Neraudia melastomatifolia* with the common name Kului/-, Federal status E, date last observed 2000, and likelihood of occurrence C;
- *Platydesma cornuta* var. *decurrens* should be inserted after *Platydesma cornuta* var. *cornuta* with the common name pilo kea /-, Federal status C, date last observed 1999, and likelihood of occurrence C;
- *Pritchardia kaalae* should be removed entirely as it does not occur within the ROI;
- *Schiedea kaalae* should be inserted after *Schiedea hookeri* with the common name Maolioli, /-, Federal status E, state/global status -/G1, date last observed 1999, and likelihood of occurrence C;
- *Schiedea nuttallii* should be removed entirely, this species does not occur in the ROI;
- *Schiedea pentandra* should be inserted after *Schiedea linguistrina* with the common name Maolioli /-, Federal status SOC, state/global status -/G2, date last observed 1994, and likelihood of occurrence C; and,
- *Zanthoxylum oahuense* should be removed entirely, this species does not occur within the ROI.

F5-76 Pg. 5-150, Table 5-23: The common name of *Nothocestrum latifolium* is listed as kulu'i. The correct common name is 'aiea.

F5-77 Pg. 5-151, Figure 5-34: We recommend changes to this table as follows: *Alectryon macroccus macrococcus* should be removed; it is misspelled and listed twice. The following species should be removed from the list: *Lipochaeta lobata leptophylla, Lobelia* sp., *Neraudia angulata angulata, Schiedea mannii, Schiedea pubescens purparescens, Tetramolopium lepidotum lepidotum Urera kaalae and Wollastonia tenuis.* The following should be added to the list with corresponding data points on the map: *Alsinidendron trinerve, Bobea sandwicwensis, Lobelia*

Responses

F5-76
It was determined that this species likely does not occur in the ROI and it has been removed from the table.

F5-77
The GIS points for these species were added to the figure. However, when cropping the image to fit inside the ROI, only 14 of the 17 additional species were shown to occur. Our GIS info came from HINHP.

Comments		Responses
F5-77 cont'd	*niihauensis, Cyrtandra subumbellata, Cyrtandra viridiflora, Lobelia hypoleuca, Melicope sandwicensis, Melicope christophersonii, Nototrichium humile, Panicum beechyi, Phlegmariarus nutans, Phyllostegia mollis, Plantago princips var. princeps, Platydesma cornuta var cornuta, Sanicula purpurea, Schiedea kaalae, and Schiedea pentandra.*	
F5-78	Pg. 5-155, Figure 5-36: Final plant critical habitat adjacent to SMBR has been identified though it is not reflected in the DEIS. We recommend the figure caption be changed from "proposed" to "final" and that the map be updated to reflect the final critical habitat designations.	**F5-78** The figure was changed to incorporate this response.
F5-79	Pg. 5-161, paragraph 4: Insert "(*Alectryon macrococcus* var. *macrococcus*)" after "mahoe;" insert "(*Lepidium arbuscula*)" after "anaunau;" and insert "(*Viola chamissoniana* ssp. *chamissoniana*)" after "olopu."	**F5-79** The text was changed to incorporate this request.
F5-80	Pg. 5-162 to163, Impact 2: Revise to recognize final designation of critical habitat for plants in the SBMR ROI. We recommend removal of "or proposed" in the title of the section. We also recommend the following: changing *C. grimesiana* ssp. *grimesiana* to *C. grimesiana* ssp. *obatae*; remove *L. kaalae, Lipochaeta lobata* var. *leptophylla, L. tenuis, L. hypoleuca*; transpose *P. kaalansis* and *P. mollis*; remove *Platydesma cornuta* var. *decurrens, P. cornuta* var. *cornuta, Pleomele forbesii, Pritchardia kaalae, Pteralyxia macrocarpa;* insert *S. kaalae*; and remove *S. nuttallii, Solanum sandwicense, Stronglylodon ruber, Tetramolopium lepidotum* spp. *lepidotum,* and *Urera kaalae.*	**F5-80** The text was changed to incorporate this request.
F5-81	Pg. 5-163 paragraph 3: We recommend this paragraph be changed to recognize the final designation of critical habitat for plants in the SBMR ROI. The reference to proposed plant critical habitat should be removed from the second line to read "It is also near the Oahu elepaio's federally designated critical habitat." The extent of critical habitat reported for plants is not accurate: 4,554 acres should be changed to 180 acres.	**F5-81** The text was changed to incorporate this response however, our calculations indicate 910 acres of plant critical habitat within the ROI.
F5-82	Pg. 5-163 paragraph 4: We recommend this paragraph be changed to recognize the final designation of critical habitat for plants in the SBMR ROI.	**F5-82** The text was changed to incorporate this response.
F5-83	Pg. 5-163, Regulatory and Administrative Mitigation 2: We recommend this paragraph be changed to recognize the final designation of critical habitat for plants in the SBMR ROI. We recommend removing the line "The USARHAW would consult about the proposed plant critical habitat when it receives its federal designation."	**F5-83** The text was changed to incorporate this response.
F5-84	Pg. 5-165, Table 5-27: We recommend revisions to this table as follows: • to maintain consistency, insert "ssp." between *grimseana* and *obatae* for *Cyanea grimseana* ssp. *obate*; • insert the common name, Palapalai lau lii, and surround *Diellia falcata* with parentheses; • insert the common name, Kamakahala, and surround *Labordia cyrtandrae* with parentheses; • insert the common name, Lanaunau, and surround *Lepidium arbuscula* with parentheses; • insert the common name, Ulihi, and surround *Phyllostegia mollis* with parentheses; • insert "var. *princeps*" after *Plantago princeps*; and	**F5-84** The text was changed to incorporate this request.

Comments

F5-84 cont'd • insert the common name, Maolioli and surround *Schiedea hookeri* with parentheses.

F5-85 Pg. 5-167, Impact 4, first paragraph: The number of special status plant species is not accurate. We recommend that the number "59" be changed to "57."

F5-86 Pg. 5-173, Impacts on Federally listed species and their federally designated or proposed critical habitat: To be consistent with other clarifications made to the DEIS, we recommend removal of "or proposed" from the title of the section. In the second paragraph, we recommend removal of the line "It would consult about proposed plant habitat for its designation;" and removal of "or proposed" from the fifth line of the paragraph.

F5-87 Pg. 6-71, paragraph 1: We recommend removal of the last sentence, which refers to unspecified listed plant species at DMR.

F5-88 Pg. 6-71, Disturbed Habitat, paragraph 2: The last sentence is not accurate because the native habitat is accessible to pigs. We recommend this sentence be removed.

F5-89 Pg. 6-80, Table 6-19: There are no sensitive plant species found within the DMR ROI. We recommend this table be removed.

F5-90 Pg. 6-84, Critical Habitat: We recommend this paragraph be edited to read: "Three and three-tenths acres of plant critical habitat have been designated for *Hibiscus brackenridgei* ssp. *mokuleianus* and *Schiedea kealiae* within the DMR ROI. The listed plants for which critical habitat is designated are identified in Appendix I-1d. There is no federally designated or proposed critical habitat for other wildlife within the DMR ROI."

F5-91 Pg. 6-85, Figure 6-17: We recommend removal of the word "proposed" and inclusion of appropriate edits to reflect the designation of final plant critical habitat.

F5-92 Pg. 6-89, Impact 2: There are no listed species within the DMR ROI and, therefore, listed species would not be impacted by training at that installation. Since critical habitat has been designated, we recommend this section be changed to recognize final designation of critical habitat for Oahu plants.

F5-93 Pg. 6-90, paragraph 1, last sentence: We recommend this section be changed to recognize final designation of critical habitat for Oahu plants.

F5-94 Pg. 6-90, Regulatory and Administrative Mitigation 2: We recommend this section be changed to recognize final designation of critical habitat for Oahu plants. We also recommend removing the sentence "The USARHAW would consult about the proposed plant critical habitat when it receives its federal designation."

F5-95 Pg. 6-90, paragraph 2: DMR does not currently contain listed plant species, therefore, we recommend that the last sentence be removed.

Responses

F5-85
The text was changed to incorporate this request.

F5-86
The text was changed to incorporate this response.

F5-87
The text was changed to incorporate this request.

F5-88
The text was changed to incorporate this request.

F5-89
Because these species have the potential to occur in the project area, the table will be left in the document.

F5-90
It is our understanding from the reading of the Federal Register that there is no critical habitat designated within Army installation boundaries. We have received confirmation from Joel Godfrey at DPW that critical habitat does not fall within the DMR ROI boundary and it is not shown on the maps.

F5-91
The text was changed to incorporate this response.

F5-92
Because there is a potential for some species of birds to be present in the project area that would be impacted by project activity, it was included in the document.

F5-93
The text was changed to incorporate this response.

F5-94
The text was changed to incorporate this response.

F5-95
The text was changed to incorporate this request.

Comments		Responses
F5-96	Pg. 7-73, Recovery Plan: The number of plant species is not accurate and should be changed from "11" to "36."	**F5-96** The text was changed to incorporate this request
F5-97	Pg. 7-76, paragraph 3: The last sentence refers to the wet cliff habitat as providing effective protection from wild pigs. This statement is not accurate because wild pigs can access many cliff habitats. We recommend removing this sentence.	**F5-97** The text was changed to incorporate this request
F5-98	Pg. 7-76, paragraph 4: We recommend removal of the sentence beginning with "Rare plants listed within this community..." because most of the plants are incorrectly identified.	**F5-98** The text was changed to incorporate this request
F5-99	Pg. 7-76, paragraph 5: To maintain consistency, we recommend the following: insert "(*Melicope* spp.)" after alani; insert haiwale before *Cyrtandra viridifolia*; insert parentheses around *Cyrtandra viridifolia*; delete "*Lycopodium*" and replace it with "*(Phlegmariarus)*;" insert "wawaeiole" before *Phlegmariarus*; and insert "heae" before (*Zanthoxylum oahuense*).	**F5-99** The text was changed to incorporate this request
F5-100	Pg. 7-77, paragraph 1: Again, for consistency, we recommend the following: add "spp." to (*Myrsine*); insert "nanu" before *Gardenia mannii*; and surround *Gardenia mannii* with parenthesis.	**F5-100** The text was changed to incorporate this request
F5-101	Pg. 7-77, paragraph 2: For consistency, we recommend the following: insert "olapa" before *Cheirodendron*; insert "spp." after *Cheirodendron* and surround *Cheirodendron* spp. with parenthesis; insert "amau" before *Cibotium* and surround *Cibotium* spp. with parenthesis; insert "(*Dubautia* spp.)" after naenae; insert "nanu" before *Gardenia mannii*; and surround *Gardenia mannii* with parenthesis.	**F5-101** The text was changed to incorporate this request
F5-102	Pg. 7-77, paragraph 3: For consistency, we recommend the following: insert "uluhe" before *Dicranopteris linearis* and place *Dicranopteris linearis* in parenthesis.	**F5-102** The text was changed to incorporate this request
F5-103	Pg. 7-77, paragraph 4: For consistency, we recommend that "(*Psychotria* spp.)" be inserted after kopiko.	**F5-103** The text was changed to incorporate this request
F5-104	Pg. 7-79, paragraph 1: Because more than one species of *Pritchardia* occur in the Koolau mountains, we recommend removal of the name *Pritchardia kaalae* and the insertion of "*Pritchardia* spp" in its place.	**F5-104** The text was changed to incorporate this request
F5-105	Pg. 7-82, paragraph 1: We recommend the following changes: replace "twenty four" with "20," "four" with "six," and "eight" with "ten;" remove "(a federally recognized species of concern);" and add the following species to the paragraph: *Chamaesyce rockii*, *Cyanea acuminata*, *C. crispa*, *C. humboldtiana*, *C. koolauensis*, *C. lanceolata*, *C. st.-johnii*, *Cyrtandra dentata*, *C. viridiflora*, *Doodia lyonii*, *Eugenia koolauensis*, *Exocarpus gaudichaudii*, *Hedyotis fluviatilis*, *Hesperomannia arborescens*, *Hibiscus kokio* ssp. *kokio*, *Joinvillea ascendens* ssp. *ascendens*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia hypoleuca*, *Melicope hiiakae*, *M. lydgatei*, *Myrsine fosbergii*, *Nesoluma polynesicum*, *Phlegmariarus nutans*, *Phyllostegia hirsuta*, *Platydesma cornuta* var. *cornuta*, *Psychotria hexandra* ssp.*oahuensis*, *Pteris lidgatei*, *Sanicula purpurea*, *Stenogyne kaakae* ssp. *sherffi*, *Tetraplasandra gymnocarpa*, and *Thelypteris boydiae*.	**F5-105** The text was changed to incorporate this request

Comments	Responses
F5-105 cont'd Also, remove "(federally recognized endangered species)" and add KLOA to the ROI title.	
Pg. 7-83, Table 7-20: We recommend the following: • remove *Bobea timonioides*, *Lobelia gaudichaudii* ssp. *gaudichaudii*, and *Viola kauaensis* as they do not occur with the ROI; • insert *Doodia lyonii* after *C. viridiflora* with a common name NCN, Federal Status SOC, State/Global Status -/G1 and Likelihood of Occurrence C; • insert *Hibiscus kokio* ssp. *kokio* after *Hesperomannia arborescens* with a common name kokio ula, Federal Status SOC, and Likelihood of Occurrence C; • insert *Joinvillea ascendens* ssp. *ascendens* after *Hibiscus kokio* ssp. *kokio* with a common name Ohe, Federal Status C, State/Global Status -/G5 and Likelihood of Occurrence C; • insert *Lobelia gaudichaudii* ssp. *koolauensis* after *Joinvillea ascendens* ssp. *ascendens* with a common name NCN, Federal Status E, State/Global Status -/- and Likelihood of Occurrence C; **F5-106** • insert *Lobelia hypoleuca* after *Lobelia gaudichaudii* ssp. *koolauensis,* common name NCN, Federal Status SOC, State/Global Status -/G3 and Likelihood of Occurrence C; • change the Likelihood of Occurrence of P for *Myrsine fosbergii* to C; • insert *Myrsine juddii* after *Myrsine fosbergii* with a common name kolea, Federal Status E, State/Global Status -/G1 and Likelihood of Occurrence C; • change the Likelihood of Occurrence of P for *Pteralyxia macrocarpa* to C and the Federal Status from NCN to C; • correct the spp. in *Stenogyne kaakae* spp. *Sherfii* to ssp., lower case *sherfii*, and change the Federal Status from E to SOC; • change the common name for *V. oahuensis* to olopu; and, • change the common name for *Zanthoxylum oahuense* to ae.	**F5-106** The text was changed to incorporate this request
F5-107 Pg. 7-90, Figure 7-22: We recommend replacement of "proposed" with "final" and revision of the map to reflect the final designation for plants.	**F5-107** The text was changed to incorporate this request
F5-108 Pg. 7-92, paragraph 3: The number of threatened or endangered plant species withing KTA is not accurate. We recommend replacement of "twelve" with "five" and revision of the list of species to reflect this correction by removal of "*Labordia cyrtandrae,*" "*Phyllostegia parviflora* var. *parviflora*" and "*Plathanthera holochila.*" The name of the genus, *Lycopodium*, has changed and should be corrected to read "*Phlegmariarus.*"	**F5-108** This text has been changed to incorporate the request.
F5-109 Pg. 7-94, last paragraph: The list of plant species that occur in particular community types is incomplete, we recommend revising the list to read: "*Chamaesyce rockii, Cyanea acuminata, C. crispa, C. humboldtiana, C. koolauensis, C. lanceolata, C. st.-johnii, Cyrtandra dentata, C. viridiflora, Doodia lyonii, Eugenia koolauensis, Exocarpus gaudichaudii, Gardenia mannii, Hedyotis fluviatilis, Hesperomannia arborescens, Hibiscus kokio* ssp. *kokio, Joinvillea ascendens* ssp. *ascendens, Lobelia gaudichaudii* ssp. *koolauensis, Lobelia hypoleuca, Melicope hiiakae, M. lydgatei, Myrsine fosbergii, Myrsine juddii, Nesoluma polynesicum, Phlegmariarus mutans, Phyllostegia hirsuta, Platydesma cornuta* var. *cornuta, Psychotria hexandra* ssp.*oahuensis, Pteralyxia macrocarpa, Pteris lidgatei, Sanicula purpurea, Stenogyne kaakae* ssp. *sherfii, Tetraplasandra gymnocarpa, Thelypteris boydiae, V. oahuensis*, and *Zanthoxylum oahuense*."	**F5-109** This text has been changed to incorporate the request.

Comments

F5-110 Pg. 7-96, paragraph 2. Impact on federally listed species and their federally designated or proposed critical habitat: Remove the three plants listed and replace them with "36 plants."

F5-111 Pg. 8-113, Recovery Plans: The number of plants contained in the recovery plan is not accurate. The number "Seven" should be changed to "Thirteen."

F5-112 Pg. 8-115 and throughout: "*Styphelia*" should be changed to "*Leptecophylla.*"

F5-113 Pg. 8-127, Table 8-20: We recommend updating the table to recognize the final critical habitat designations.

F5-114 Pg. 8-129, Figure 8-28: The figure does not reflect the presence of *Isodendrion hosakae*, *Lipochaeta venosa* or *Vigna o-wahuensis*. We recommend this be corrected either with an inset in the current figure or by inclusion of another figure.

F5-115 Pg. 8-134, Figure 8-30: This figure should be updated to reflect final critical habitat boundaries.

F5-116 Pg. 8-136, Critical Habitat: As described above, the area presented in the DEIS as palila critical habitat is incomplete. The designated critical habitat (109,000 acres) is much larger than depicted. We recommend this be corrected.

F5-117 Pg. 8-141, paragraph 4: The information regarding plant occurrences in Training Area (TA) 23 is not accurate. *Haplostachys haplostachya* is currently not found in TA 23. The listed species that may be affected in this area are *Asplenium fragile* var. *insulare*, *Hedyotis coriacea*, *Silene hawaiiensis*, *Silene lanceolata*, *Spermolepis hawaiiensis*, and *Zanthoxylum hawaiiense*.

F5-118 Appendix I-1: The citations for the following species should be removed: *C. grimseana* ssp. *grimseana*, *C. st johnii*, *C. superba*, *D. unisora*, *Isodendrion laurifolium*, *Lipochaeta lobata* var. *leptophylla*, *L. oahuensis*, *Pritchardia kaalae*, *Tetramolopium lepidotum* ssp. *lepidotum*, and *Urera kaalae*. Citations for the following species should be inserted: *C. grimseana* ssp. *obatae*, *Cyrtandra viridiflora*, and *Schiedea kaalae*.

F5-119 Appendix I-1, Pg. I-1-2, DMR, Plant: We recommend removing all plants, since there are no listed species known to occur within the DMR ROI.

F5-120 Appendix I-1, Pg. I-1-2, KTA, Plant: Insert "/KLOA" after "KTA." We also recommend removal of the citations for the following species: *C. longiflora* and *C. grimseana* spp. *grimseana*. Insert citations for the following species: *Cyanea acuminata*, *C. lanceolata*, *C. st.-johnii*, *Cyrtandra dentata*, *C. viridiflora*, *Doodia lyonii*, *Exocarpus gaudichaudii*, *Hedyotis fluviatilis*, *Hibiscus kokio* ssp. *kokio*, *Joinvillea ascendens* ssp. *ascendens*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia hypoleuca*, *Melicope hiiakae*, *M. lydgatei*, *Myrsine fosbergii*, *Myrsine juddii*, *Nesoluma polynesicum*, *Phlegmariarus nutans*, *Platydesma cornuta* var. *cornuta*, *Psychotria hexandra* ssp. *oahuensis*, *Pteralyxia macrocarpa*, *Pteris lidgatei*, *Sanicula purpurea*, *Stenogyne kaakae* ssp. *sherffi*, *Thelypteris boydiae*, *V. oahuensis*, and *Zanthoxylum oahuense*.

F5-121 Appendix I-1, Pg. I-1-4, I-1B Special Status Plants - Natural History Information and SBCT

Responses

F5-110
This text has been changed to incorporate the request.

F5-111
This text has been changed to incorporate the request.

F5-112
This text has been changed to incorporate the request.

F5-113
The text was changed to incorporate this response.

F5-114
This is included on the figure.

F5-115
The corrections were made to this figure and these changes were evaluated in the impact analysis.

F5-116
Our figures show only the critical habitat within the ROI for this Chapter. Chapter 3 is the only chapter that shows any critical habitat outside of the ROI.

F5-117
The text in was changed to incorporate this request

F5-118
These changes were made to Appendix I-1.

F5-119
These changes were made to Appendix I-1.

F5-120
These changes were made to Appendix I-1.

F5-121
These changes were made to Appendix I-1.

Comments

Location if Known, Status Key: We recommend removal of "Federally" from "Federally listed as a species of concern." There is no official Federal list for this category.

F5-121 cont'd

The following species descriptions should be removed from this section: *B. timonioides, Cyperus trachysanthos, Diplazium molokaiense, H. parvula,* both paragraphs for *Hibiscus brackenridgei* ssp. *mokuleianus, I. laurifolium, L. bidentatum* var. *o-waihiense, Lipochaeta lobata* var. *leptophylla, L. remyi, Lobelia gaudichaudii* ssp. *gaudichaudii, L. oahuensis, Pritchardia kaalae, S. nuttallii, S. kealiae, S. sandwicense, S. kanehoena, S. sherffii, T. lepidoptum* spp. *lepidoptum, Urera kaalae,* and *Viola kauaensis.*

Descriptions for the following species should be added to this section: *C. crispa, C. grimseana ssp. obatae, C. humboldtiana, C. lanceolata* ssp. *calcynia, C. membranacea, Doodia lyonii, Hedyotis fluviatilis, Lobelia hypoleuca, Melicope sandwicensis, Myrsine juddii, Neraudia melastomatifolia, Mesoluma polynesicum, Panicum beechyi, Phyllostegia kaalensis, Portulaca villosa, Schiedea lingustrina, Schiedea kaalae, Schiedea pentandra, Stenogyne kaakae* ssp. *sherffii,* and *Strongylodon ruber.*

F5-122

Pg. I-1-4, I-1B: The information in the species paragraphs is not accurate, and the accurate information may be obtained from the BO for Routine and Transformation-related training. We ask that you incorporate this information into the FEIS.

F5-123

Appendix I-3, Special Status Species confirmed or with the Potential to Occur in Each ROI: We recommend incorporating the following changes to this table:

- remove the following species because they do not occur within the ROIs: *Bobea timonioides, C. waiolani, Lipochaeta lobata* var. *leptophylla, Lobelia gaudichaudii* ssp. *gaudichaudii, Neraudia angulata* var. *angulata, Nothocestrum latifolium, Schiedea nuttallii* var. *nuttallii, T. lepidotum* spp. lepidotum, Urera kaalae, and *V. kauaiensis.*;
- add "NCN" to *Abutilon sandwicense*;
- replace the *A.* of *A. trinerve* with *"Alsinidendrion"* and add "NCN" for the common name;
- replace the Federal status of *Bobea sandwicensis* with "SOC" and remove its presence from DMR;
- change the subspecies of *C. lanceolata* spp. *Calcynia* to "ssp. *calcyia*;"
- replace the Federal status of *Doodia lyonii* with "SOC" and add a X under KTA/KLOA;
- switch the order of *Diellia falcata* and *Delissea subcordata*;
- insert *Hibiscus kokio* ssp. *kokio*, common name kokio ula, after *Hesperomannia arborescens*, Federal status SOC, KLOA;
- change the "spp." in *Joinvillea* to "ssp." and correct the spelling of the genus;
- replace the Federal status of *L. hypoleuca* with "SOC;"
- insert *L. yuccoides*, common name NCN, after *L. niihauensis*, Federal status SOC, SBMR;
- insert *Melicope christophersenii*, common name alani, after *L. yuccoides*, Federal status C, SBMR;
- replace the Federal status of *Melicope cinera* with SOC;
- insert *Melicope sandwicensis*, common name alani, after *Melicope cinera*, Federal status SOC, SBMR;
- replace the Federal status for *Portulaca villosa* with SOC;

Responses

F5-122

These changes were made to Appendix I-1.

F5-123

These changes were made to Appendix I-3.

F5-123 cont'd

- move *S. ligustrina* to follow *S. kaalae* and change the Federal Status of "-" to "SOC;"
- remove the X under DMR for *S. kaalae*.

References Cited

Jacobs, D. S. 1994. Distribution and abundance of the endangered Hawaiian hoary bat *Lasiurus cinereus semotus*, on the island of Hawaii. Pacific Science 48:193-200.

Vick A., D. Orletsky, B. Pirnie, S. Jones. 2002. The Stryker brigade combat team: rethinking strategic responsiveness and assessing deployment options. Rand Corp Report MR-1606. 157 pp.

U.S. Fish and Wildlife Service. 1983. Hawaiian Dark-rumped Petrel and Newell's Manx Shearwater Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 57 pp.

U.S. Fish and Wildlife Service. 1999. Draft Revised Recovery Plan for Hawaiian Waterbirds, Second Revision. U.S. Fish and Wildlife Service, Portland, OR. 107 pp.

U.S. Fish and Wildlife Service. 2003. Draft Revised Recovery Plan for Hawaiian Forest Birds. U.S. Fish and Wildlife Service, Portland, OR. 428 pp.

U.S. General Accounting Office, July 2003. Military Transformation: Realistic Deployment Timelines Needed for Army Stryker Brigades. GAO-03-801. 31 pp.

Comments

Letter F6

U.S. Department of Transportation
Federal Highway Administration

Central Federal Lands Highway Division
555 Zang Street
Mail Room 259
Lakewood, CO 80228

January 6, 2004

Refer To: HFPM-16

Ms. Cindy Barger
U.S. Army Corps of Engineers
Honolulu District
Fort Shafter, HI 96858-5440

Subject: Draft Environmental Impact Statement Comments
Transformation of the 2nd Brigade

Dear Ms. Barger:

The Federal Highway Administration – Central Federal Lands Highway Division (CFLHD) in cooperation with the Hawaii Department of Transportation (HDOT), are proposing to improve Saddle Road, State Route (SR) 200, in the County of Hawaii. As the lead agency for the Saddle Road improvement project, we offer the following comments on the subject document.

General:

F6-1 The proposed Saddle Road improvements will extend from mile marker 6 in Kaumana to Mamalahoa Highway, SR 190. The westerly 12 miles of the Saddle Road improvement project (referred to as W-3) will be realigned southwesterly of its current location. The new alignment passes through the lower portion of the proposed land acquisition and expansion of the Pohakuloa Training Area (PTA). Consideration should be given to limiting the proposed acquisition to north of the proposed W-3 alignment, or if necessary, to conducting additional environmental studies to address any desired alignment shifts of the W-3 alignment to avoid conflicts between military training and public traffic on the new Saddle Road.

Page 4-40: *Less than Significant Impacts:*

F6-2 *Intersection Operations.* The reference in the first paragraph to several public crossings of the Helemano Trail between SBMR and HMR is apparently erroneous. The cited crossings (Queen Ka'ahumanu Highway, Kawaihae Road, and Mamalahoa Highway) are with roads in the County of Hawaii, not on Oahu.

F6-3 In the second paragraph, the trail between PTA and Kawaihae Harbor is noted as crossing the Mamalahoa Highway (SR 190) south of Saddle Road. On page 8-78 under *Less than Significant*

Responses

F6-1
The new Saddle Road alignment is proposed through the southern portion of the West PTA Acquisition Area. The U.S. Department of Transportation, Federal Highway Administration (FHA), could not provide a firm construction date at this time for this section of the new Saddle Road. If the Army decides to implement the proposed action, the Army will coordinate all road crossings with the FHA to minimize impacts to traffic along the new Saddle Road. Phase III of the Saddle Road realignment (which is from PTA West) has not yet been designed. Upon a favorable Record of Decision (ROD), the Army would purchase the Ke'āmuku and own the land bordering both sides of this section to Saddle Road. The Army would request that the road design be conducive to training needs ,which would include a possible road crossing with traffic control devices and an appropriate number of troop underpasses (which has not been determined yet). Proper use of these two means of crossing the public road would not seriously hamper military training, as many realistic scenarios found in real world situations involve consideration of public roadways.

F6-2
Section 4.7.3 has been revised to correct the information.

F6-3
Section 4.7.3 has been revised to correct the information.

Comments

F6-3 cont'd *Impacts*, this crossing is reported to be north of Saddle Road. This location inconsistency should be corrected here as well as in any other sections of the document that refers to the trail crossing of SR 190.

Page 9-17: *Saddle Road Realignment – Island Of Hawai`i (Project 5):*

F6-4 The second sentence indicates that approximately 250 miles (402 kilometers) of Saddle Road will be modernized to AASHTO standards. The actual improvements to Saddle Road will be approximately 50 miles in length.

Page 9-29: Traffic - *Proposed Action:*

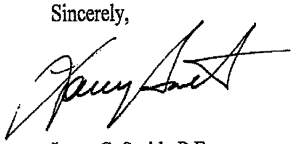
F6-5 The subject document states that the cumulative impacts of various anticipated highway projects and the vehicle trail crossings would have to be addressed by the environmental assessment of the specific highway project. If there will be any trail crossings with the Saddle Road improvement project, the cumulative impacts should be addressed by the proposed trail project. The Saddle Road Environmental Impact Statement was completed in late 1999.

Page 9-30: Traffic - *Proposed Action:*

F6-6 The first sentence of the first paragraph states that the (Saddle Road) project will have no impact on the proposed military trail element because the trail will not cross the Saddle Road. Although it is conceivable that the trail will not necessarily have to cross the new Saddle Road alignment (W-3) in the proposed land acquisition, it seems probable that it will. If true, it may be possible to avoid an 'at-grade' trail crossing by constructing a roadway bridge to separate the military and public traffic.

Thank you for the opportunity to comment of the draft Transformation Environmental Impact Statement. Should the land acquisition portion of the Transformation proposal move forward, we recommend scheduling a meeting to coordinate the common elements of this important effort with those of the proposed Saddle Road improvement project. If you have any questions, please contact Mr. Dave Gedeon at 303-716-2131.

Sincerely,



Larry C. Smith, P.E.
Division Engineer

Responses

F6-4
Section 9 corrected.

F6-5
The new Saddle Road alignment is proposed through the southwestern portion of the West PTA Acquisition Area. The U.S. Department of Transportation, Federal Highway Administration (FHA), confirmed that there are no scheduled funds and no scheduled construction date at this time for this section of the new Saddle Road. If the Army decides to implement the proposed action, the Army would coordinate with FHA to reduce the number of crossings of the new Saddle Road and where practicable have crossing go under the road versus across grade, thereby minimizing any impact to traffic along the new Saddle Road. If the Army decides to implement the proposed action, the Army would coordinate with FHA to limit training activities likely to disturb traffic in proximity to Saddle Road during high traffic periods. WPAA acquisition is part of the project description and impacts caused by this project component are discussed under the appropriate resource categories in Chapter 8.

F6-6
The new Saddle Road alignment is proposed through the southern portion of the West PTA Acquisition Area. The U.S. Department of Transportation, Federal Highway Administration (FHA), could not provide a firm construction date at this time for this section of the new Saddle Road. If the Army decides to implement the proposed action, the Army will coordinate all road crossings with the FHA to minimize impacts to traffic along the new Saddle Road. Phase III of the Saddle Road realignment (which is from PTA West) has not yet been designed. Upon a favorable Record of Decision (ROD), the Army would purchase the Ke'āmuku and own the land bordering both sides of this section to Saddle Road. The Army would request that the road design be conducive to training needs which would include a possible road crossing with traffic control devices and an appropriate number of troop underpasses (which has not been determined yet). Proper use of these two means of crossing the public road would not seriously hamper military training, as many realistic scenarios found in real world situations involve consideration of public roadways.

Letter F7

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Cindy Barger, EIS Project Manager
U.S. Army Corps of Engineers
Honolulu District, Building 230
Fort Shafter, HI 96858

January 2, 2004

Subject: Draft Environmental Impact Statement, Transformation of 2nd Brigade, 25th Infantry Division to Stryker Brigade Combat Team, Hawaii (CEQ #030442)

Dear Ms. Barger:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the above-referenced project. Our comments are provided under the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

Three alternatives are fully evaluated: No Action, a Reduced Land Acquisition Alternative, and the Proposed Action. We rate the DEIS and Proposed Action as EC-2, Environmental Concerns - Insufficient Information. Please see the enclosed "Summary of Rating Definitions" for a detailed explanation of EPA's rating system.

EPA has environmental concerns due to a stated "likelihood" that the Proposed Action potentially exceeds the National Ambient Air Quality Standard (NAAQS) for particulate matter less than 10 microns in diameter (PM10) at Schofield Barracks Military Reservation (SBMR), Dillingham Military Reservation, Kahuku Training Area, and Pohakuloa Training Area. Increased PM10 emissions are projected under the Proposed Action, including a doubling of PM10 emissions (to 1,640 tons per year) at SBMR (Vol. 1, p. 5-55). Although the DEIS presents mitigation to reduce PM10 emissions, it does not quantify reductions, nor commit to implement mitigation to ensure that the PM10 NAAQS is not exceeded. Should the Army determine that emissions exceed the NAAQS, mitigation should be incorporated into the Proposed Action to ensure compliance with the Clean Air Act. Additionally, EPA recommends that the Army evaluate the feasibility of PM10 monitoring at all sites where the NAAQS would likely be exceeded, and implementing an adaptive management program for additional controls if the PM10 NAAQS is approached or exceeded.

We are also concerned that the DEIS does not address if increased emissions may have a disproportionately high, adverse effect on neighboring communities. The FEIS should address the extent to which PM10 mitigation will reduce or avoid potentially adverse air quality effects on such communities, and the extent to which they are involved in developing this project's mitigation.

We appreciate the opportunity to comment. Please send two copies of the FEIS when available. If you have any questions, please contact my staff reviewer for this project, David Tomsovic, at 415-972-3858 or <tomsovic.david@epa.gov>.

Sincerely,

Lisa B. Hanf, Manager
Federal Activities Office

Enclosures: 4
"Summary of EPA Rating Definitions"
EPA's Detailed Comments on DEIS
Fugitive Dust Control Plan (China Lake Naval Weapons Station)
Dust Abatement Practices on Unpaved Country Roads (Oregon)

cc: Wilfred K. Nagamine, Clean Air Branch, Hawaii Department of Health, Honolulu
Genevieve Salmonson, Director, Office of Environmental Quality Control, Honolulu
Wendy Wiltse, EPA Region IX, Pacific Islands Contact Office, Honolulu

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Comments

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) DETAILED COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) - TRANSFORMATION OF 2ND BRIGADE, 25TH INFANTRY DIVISION (L) TO STRYKER BRIGADE COMBAT TEAM - HAWAII - JANUARY 2, 2004

Air Quality

Fugitive Dust Emissions and Operational Training

EPA is concerned about a stated "likelihood" that the Proposed Action potentially exceeds the Federal 24-hour air quality standard for particulate matter less than 10 microns in diameter (PM10) at Schofield Barracks Military Reservation (SBMR) (Vol. 1, p. 5-55); Dillingham Military Reservation (DMR) (Vol. 1, p. 6-33); Kahuku Training Area (KTA) (Vol. 2, p. 7-34); and Pohakuloa Training Area (PTA) (Vol. 2, p. 8-51). The DEIS is unclear if the Proposed Action exceeds the National Ambient Air Quality Standard (NAAQS) at any training sites and, if so, whether proposed mitigation ensures that the PM10 NAAQS is not exceeded at any facility. The DEIS presents the following mitigation measures to reduce PM10 emissions from operational training on unpaved roads and off-road vehicle maneuver areas:

F7-1

- applying gravel cover on dirt roads and exposed areas;
- paving dirt roads and exposed areas;
- using periodic water spray applications to reduce fugitive dust;
- using synthetic dust control chemicals;
- rotating use among available areas to allow revegetation; and,
- implementing a reseeding program to enable revegetation between training periods (see, for example, Vol. 1, pp. 5-55 and 5-56 for SBMR; and Vol. 2, pp. 8-52 and 8-53 for PTA).

The DEIS discusses the anticipated effectiveness of two controls: a program of regular water spraying reduces PM10 emissions by 75 to 90 percent, and synthetic dust control chemicals achieve reductions exceeding 50 percent (Vol. 1, p. 5-56). However, the DEIS does not quantify the anticipated reductions that could be achieved using these strategies, nor what steps the Army intends to take if the Federal PM10 standard is exceeded. Because the DEIS does not have a specific commitment to mitigate PM10 emissions, it is unclear if the identified mitigation successfully eliminates the likelihood of exceeding the NAAQS at the facilities evaluated.

Recommendations: The Final EIS (FEIS) should quantify the anticipated PM10 reductions at each training site that would be achieved with mitigation. The FEIS should address what mitigation would be implemented at each facility to ensure that the Federal PM10 standard is not exceeded. The FEIS should address specific actions the Army would take if the Federal PM10 standard is approached or exceeded at any sites.

Responses

F7-1

The discussion of fugitive dust issues has been expanded in the Final EIS to include results of dispersion modeling to estimate PM10 concentrations from vehicle activity on unpaved roads and in off-road maneuver areas. The Army has committed to mitigating dust from vehicle traffic on unpaved roads through a combination of dust control chemical applications and/ or the use of washed gravel for surfacing military vehicle trails. In addition, the Army would implement a Dust and Soils Management and Monitoring Plan that would include ambient air quality monitoring of PM10 conditions. The monitoring of ambient PM10 concentrations would help guide the development and implementation of an adaptive management program to manage training area lands and modify training procedures as necessary to ensure compliance with federal air quality standards. The Final EIS concludes that the potentially significant impacts from fugitive dust can be mitigated to a level that is less than significant.

Comments

Mitigation to Avoid Exceedances of the Federal PM10 Standard

Addressing fugitive dust from military vehicles on unpaved roads and off-road areas, the DEIS states, "The impact from fugitive dust emissions could be reduced through mitigation, but it is unlikely that the impact could be reduced to a less than significant level" (Vol. 1, p. 5-53). This conclusion is not substantiated. Although 88 percent of the net PM10 increase is due to vehicle use on unpaved roads, the DEIS does not specifically evaluate the emissions reduction that could be achieved by paving the most-traveled operational corridors and applying dust suppressants to less-traveled corridors and off-road vehicle maneuver areas. It also does not address the feasibility of reducing the overall area available for off-road vehicle maneuvers, especially at training sites where the Federal PM10 standard would likely be exceeded.

F7-2

Although not evaluated or quantified, additional controls may incrementally contribute to PM10 reductions as well. The DEIS does not address the feasibility of installing nets, tarp or other protective cover at locations where off-road maneuvers generally do not occur, but which are still susceptible to erosion and fugitive dust (e.g., areas of steep terrain). It does not address the feasibility of reducing the speed of vehicles on highly-eroded areas.

Since it is unclear if the mitigation presented in the DEIS is sufficient to ensure that the Federal PM10 standard is not exceeded, additional mitigation may be warranted. We attach for your reference a fugitive dust control plan prepared for the Naval Air Weapons Station, China Lake, California (1994). The Navy's plan may be useful in finalizing a fugitive dust mitigation program for the FEIS and Record of Decision. The Hawaii Department of Health may have additional recommendations as well.

Recommendations: If mitigation presented in the DEIS is insufficient to avoid likely exceedances of the Federal PM10 standard, the FEIS should address the feasibility of implementing additional controls, which may include those identified above. The Hawaii Department of Health should be consulted on such measures.

Air Quality Monitoring and Adaptive Management

Volume 1 (p. 3-24) indicates that nine ambient air quality monitoring stations are maintained on the Island of Oahu, and five on the Island of Hawaii. No monitoring stations are sited at or near Army training facilities on the two islands. The DEIS does not address the

F7-3

feasibility of a PM10 monitoring program at training sites where the Federal PM10 standard would likely be exceeded. It does not address applicable Federal requirements for collecting representative monitoring data such as Section 2.3 (Data Requirements) of 40 CFR Part 50, Appendix K (Interpretation of the National Ambient Air Quality Standards for Particulate Matter). The DEIS does not evaluate the feasibility of implementing an adaptive management program that, as needed, strengthens and complements PM10 mitigation should the Federal standard be exceeded at any training site. The DEIS does not address the feasibility of additional controls that could be implemented if exceedances are confirmed by monitoring.

Responses

F7-2

The discussion of fugitive dust issues has been expanded in the Final EIS to include results of dispersion modeling to estimate PM10 concentrations from vehicle activity on unpaved roads and in off-road maneuver areas. As a mitigation measure, the Army has committed to mitigating dust from vehicle traffic on unpaved roads through a combination of dust control chemical applications and/ or the use of washed gravel for surfacing military vehicle trails. In addition, the Army would implement a Dust and Soils Management and Monitoring Plan that would include ambient air quality monitoring of PM10 conditions. The monitoring of ambient PM10 concentrations would help guide the development and implementation of an adaptive management program to manage training area lands and modify training procedures as necessary to ensure compliance with federal air quality standards. There are no indications that wind erosion is a significant problem at locations on USARHAW installations where there is no disturbance by vehicle maneuver traffic. The installation of nets, tarps, or other protective covers in barren areas where there is no vehicle use might help reduce general precipitation-related soil erosion, but such actions would have little effect in addressing fugitive dust issues.

F7-3

Applicable federal requirements for air quality surveillance programs apply to the State of Hawai'i, not to the Army. In addition, it should be noted that EPA reviews and approves the state air quality monitoring program. The existing distribution of monitoring stations has been approved by EPA as meeting Clean Air Act requirements. As noted in the Final EIS, the Army would implement a Dust and Soils Management and Monitoring Plan that would include ambient air quality monitoring of PM10 conditions. The monitoring of ambient PM10 concentrations would help guide the development and implementation of an adaptive management program to manage training area lands and modify training procedures as necessary to ensure compliance with federal air quality standards.

Comments

F7-3 cont'd

Recommendations: The FEIS should address the feasibility of air quality monitoring at training sites where exceedances of the Federal PM10 standard are likely, and an adaptive management program if controls currently proposed are insufficient to prevent exceedances of the Federal PM10 standard. An adaptive management program would be available for implementation if monitoring shows that the Federal PM10 standard is exceeded. An air quality monitoring program should be referenced in the Army's Record of Decision for this project [see 40 CFR Part 1505.2(c)].

F7-4

Potential Mitigation for Construction Emissions

The DEIS indicates that construction emissions are not significant (e.g., Vol. 1, p. 5-57; and Vol. 2, p. 8-54). No mitigation is proposed to reduce construction emissions (Vol. 1, Table ES-21). However, the DEIS addresses a single air pollutant, oxides of nitrogen (NOx). It does not evaluate PM10 and other air pollutants generated by construction, including diesel particulate matter (DPM). To the extent that construction emissions potentially affect downwind communities, mitigation may be feasible to reduce such emissions, including:

- using particle traps and other appropriate controls to reduce emissions of DPM and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions;
- using diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, substantially reducing DPM emissions;
- reducing construction-related trips of workers and equipment, including trucks and heavy equipment;
- leasing or buying newer, cleaner equipment (1996 or newer model);
- employing periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accord with established specifications;
- working with the Hawaii Department of Health to identify feasible mitigation to reduce construction emissions; and
- developing and adopting a "*Construction Emissions Mitigation Plan.*"

Two agencies recently identified a program of mitigation to reduce construction emissions. The National Aeronautics and Space Administration (NASA) included measures in its Record of Decision for *NASA Ames Development Plan.* The Federal Aviation Administration and the City of Los Angeles included a construction emissions mitigation program in a Supplemental DEIS for *Los Angeles International Airport Master Plan Improvements.*

Recommendation: The FEIS should evaluate the feasibility of measures to reduce construction emissions, referencing any which are adopted in the Record of Decision. Any determination of significance for construction emissions should evaluate DPM, PM10, and other air pollutants, as well as NOx.

Responses

F7-4

Normal dust control measures, such as those required by state regulations, would be incorporated into construction contracts. The emission estimates for fugitive dust from construction activities assumed implementation of normal dust control measures in a manner sufficient to provide 50% control of fugitive dust. Therefore, no additional dust control measures were discussed in the EIS. The DEIS includes emission estimates for all criteria pollutants generated by construction equipment engine operation. Since nitrogen oxide emissions are clearly the predominant pollutant of concern from diesel engine equipment, the text discussion focused on those emissions. Annual construction activity emissions for all criteria pollutants are illustrated in Figure 5-11 (Schofield Barracks), Figure 6-7 (DMR), Figure 7-9 (KTA), and Figure 8-10 (PTA). Appendix G2 presents annual construction activity emission estimates for individual construction projects at each installation. Because Hawai'i is an attainment area for all criteria pollutants, the implementation of special mitigation measures for reducing engine emissions from construction equipment was not considered necessary.

Comments

Environmental Justice

The DEIS identifies two potential environmental justice impacts (noise and military traffic) at SBMR (Vol. 1, pp. 5-230 and 5-231), DMR (Vol. 1, p. 6-122), and KTA (Vol. 2, p. 7-136). The DEIS does not identify environmental justice as an issue of concern at PTA since it is "relatively isolated" (see Vol. 2, p. 8-208). The overview of environmental and socioeconomic consequences (Vol. 1, p. 4-96) does not identify elevated air pollutant levels on adjacent communities as a potential environmental justice impact.

The DEIS acknowledges that increased PM10 emissions and transport to adjacent communities are expected environmental consequences of the Proposed Action. The DEIS indicates that the Proposed Action is expected to have adverse air quality effects on adjacent communities, potentially affecting the residents' quality of life. The DEIS also notes that it is "unlikely" that projected increases in fugitive dust can be reduced to less than significant levels (see Vol. 1, p. 5-55; Vol. 2, p. 8-49). We are concerned that the DEIS does not address if the Proposed Action contributes to disproportionately high, adverse health and environmental effects on downwind populations from increased PM10 levels. To the extent that air pollutants can be transported downwind and offsite to sensitive receptors, this is a potential environmental justice impact.

F7-5 The DEIS does not address if potential air quality impacts to low-income or minority populations are disproportionately high and adverse compared to the general population or comparison group that was evaluated (i.e., Volume 1, pp. 5-230 and 5-231). The DEIS also does not address if there are cumulative impacts associated with air quality to nearby communities.

Because of likely PM10 violations, environmental justice is an important consideration when assessing and mitigating such impacts, especially if transported to downwind communities. The minority composition in the Regions of Influence for this project is substantial. The minority population of the Wahiawa Census County Division (within which SBMR is located) is 68 percent (Vol. 1, p. 5-225). The percentage of minority residents in the four census county divisions within which PTA is located ranges from 52.9 percent (North Kona) to 71.9 percent (North Hilo), while the census county division within which PTA is primarily located (Pa'auhau-Pa'auilo) is 67.5 percent minority.

Guidance issued by the Council on Environmental Quality (CEQ), "*Environmental Justice Under the National Environmental Policy Act*," may be useful as the Proposed Action is refined. CEQ's guidance provides that mitigation in impact statements "should reflect the needs and preferences of affected low-income populations (and) minority populations to the extent practicable." The DEIS does not address if the air mitigation was developed in consultation with potentially affected communities on the two islands. An effective air quality mitigation program constitutes "pollution prevention" as defined by CEQ ("*Pollution Prevention and the National Environmental Policy Act*," CEQ, January 1993). Pollution prevention opportunities, including air quality mitigation, can be an important component in reducing potentially disproportionate, adverse effects on environmental justice communities (see June 2003 report to EPA, "*Advancing*

Responses

F7-5

Comments noted. Mitigative measures regarding fugitive dust issues are currently being developed by the military in consultation with the EPA. Please refer to Section 4.11 of the EIS for discussions regarding mitigative measures taken to reduce the effects on resources of cultural importance to Native Hawaiian residents. Please refer to Section 4.13 of the EIS for discussions regarding socioeconomic and environmental justice issues. The DEIS has been revised to include a discussion of fugitive dust EJ issues. In general, the communities living nearest and downwind of SBMR are the only areas that would be subjected to significant dust emissions. These communities, Mililani and especially Wahiawa, are mainly middle and upper income communities that are not prevalently minority.

Comments

Environmental Justice Through Pollution Prevention - A Report Developed from the National Environmental Justice Advisory Council Meeting of December 9-13, 2002," at <www.epa.gov/compliance/resources/publications/ej/pollution-prevention-recom- report. html>).

Draft guidance issued by EPA regarding Title VI of the Civil Rights Act may be a useful reference, including development of a methodology to make a determination on disproportionately high, adverse effects on low-income or minority populations (see Federal Register, June 27, 2000, pp. 39650-39701, "Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs and Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits.").

F7-5 cont'd

Recommendations: The FEIS should address if increased PM10 levels under the Proposed Action contribute to a disproportionately high, adverse effect on low-income or minority populations, compared to the general population or comparison group that was evaluated, consistent with Executive Order 12898. The FEIS should address the extent to which PM10 mitigation and other pollution prevention efforts reduce potential effects on low-income or minority communities. The FEIS should address if the proposed air mitigation was developed in consultation with potentially affected low-income or minority populations. To the extent other impacts present a disproportionately high, adverse effect on low-income or minority populations, the FEIS should address how proposed mitigation reflects their needs and preferences. This could include the concerns of Native Hawaiians to avoid, reduce or mitigate adverse effects on resources of cultural importance to Native Hawaiian residents.

Water Quality

The DEIS addresses synthetic dust control chemicals to reduce fugitive dust. Volume 1 (p. 5-56) states that Army testing found calcium chloride solutions to be more effective than synthetic polymers or calcium lignosulfonate. However, the DEIS does not address potential effects on the quality of surface water or ground water from using such chemicals, nor identify mitigation to reduce potential adverse effects. The DEIS does not specifically address potential effects on aquatic species or other species (e.g., birds) that use ponded or standing water, where such chemicals may concentrate. We enclose a useful reference, "*BMPs [Best Management Practices] for Dust Abatement Practices on Unpaved County Roads in Oregon*," presenting information on water quality and toxicity from dust control chemicals.

F7-6

Recommendations: The FEIS should evaluate potential effects on the quality of surface water and ground water from using synthetic dust control chemicals. The FEIS should evaluate potential effects on aquatic species and species that may use ponded or standing water. The FEIS should present appropriate mitigation to avoid or reduce potential effects when using such chemicals, including appropriate commitments in the Record of Decision.

Pollution Prevention and Waste Minimization

The Proposed Action involves demolition and construction activities. The DEIS does not address reusing or recycling demolition waste (concrete, bricks, tile, metal, asphalt, wood, glass, sheetrock, plastics, and wiring) as fully as possible. The DEIS does not address if recovered materials would be used to construct new facilities, nor provide a commitment for procuring construction materials composed of the highest percentage of recovered materials practicable (see Section 6002 of the Resource Conservation and Recovery Act).

F7-7

Recommendations: The FEIS should include commitments to reuse and recycle the project's demolition waste to the fullest extent, and to procure construction materials composed of the highest percentage of recovered materials. This should be reflected in the Record of Decision. It would affirm the Army's continuing commitment to pollution prevention, waste minimization, and environmental stewardship.

Responses

F7-6

Thank you for pointing this out. The issue is now addressed in the water resources and biological resources sections of the FEIS. Based on the Oregon BMP report cited in the comment, it does not appear that impacts on water quality are likely if the palliatives are applied according industry standard practices. The Parametrix/OACES Dust Abatement Practices document has been added to the literature cited.

F7-7

The EIS has determined that there is no significant impact to public services by the implementation of the proposed action. The Army designs all of its projects, including those in this proposed action, in accordance with Executive Order 13123 "Greening the Government through Efficient Energy Management" (June 2001), Executive Order 13101 "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition" (September 1998), and Department of the Army Engineering Technical Letter 1110-3-491 "Sustainable Design for Military Facilities" (May 2001) and the U.S. Army Corps of Engineers Sustainable Project Rating Tool (SPiRiT). These documents and tools provide design guidelines and standards for sustainable development - addressing water resources, energy and atmospheric resources, indoor environmental quality, material and other resources.

FUGITIVE DUST CONTROL PLAN FOR THE NAVAL AIR WEAPONS STATION CHINA LAKE, CALIFORNIA

Submitted to
Kern County Air Pollution Control District

1 September 1994

Comments

1.0 INTRODUCTION

The Searles Valley Planning Area (SVPA) was designated a "moderate" non-attainment area for fine particulate matter (PM10) by operation of law with passage of the Clean Air Act Amendments of 1990. This area includes portions of Kern, Inyo, and San Bernardino Counties. It also includes a significant portion of the Naval Air Weapons Station (NAWS) China Lake.

The three affected counties jointly developed and submitted a State Implementation Plan (SIP), representing a comprehensive regional strategy for addressing the PM10 problem. However, the control measures within the plan were tailored to the differing problems found within the three jurisdictions.

The Kern County Air Pollution Control District strategy for attaining the PM10 ambient air quality standard is largely based on its Fugitive Dust Rule (Rule 402) which was adopted on November 29, 1993. This Fugitive Dust Emissions Control Plan for the Naval Air Weapons Station (NAWS), China Lake has been prepared pursuant to paragraph V(D)(3) of that rule. The purpose of this plan is to identify applicable sources of fugitive dust within NAWS, China Lake's boundaries and describe the Reasonably Available Control Measures (RACM) which will be utilized for each of those sources.

2.0 APPLICABILITY AND POTENTIAL SOURCES

The first step in the development of this Plan was to survey potential sources of fugitive dust within the affected area, and then to determine which of those areas are subject to the provisions of Rule 402. This survey was conducted in several steps by surveying available data to identify potential sources of fugitive dust.

2.1 Unpaved Roads *

All unpaved roads within the affected area were identified using comprehensive maps of the Station. Roads less than 75 feet in length were eliminated from the analysis, as they are exempt from the provisions of Rule 402 (para IV (A)(6)(a)). Traffic counts were then conducted on the remaining roads. These traffic counts resulted in the elimination of all but one of the unpaved roads, since they do not have motor vehicle traffic of 25 vehicle-trips per day or more (Rule 402 para IV(A)(6)(b)). Please see Appendix A for unpaved road locations and lengths. The one road subject to Rule 402 is the access road to Hangar 4, identified as "Area 1" in Table 1.

* Maps of potential sources available upon request.

Responses

Comments

2.2 Disturbed Areas

Potentially disturbed areas were identified using aerial photographs taken of the Station in August 1989. A field survey was then conducted to determine the current condition of each area. The following is a summary of the field survey results.

(a) Public Works Compound: This compound, identified as "Area 8" in Table 1, covers nearly 107 acres in two separate areas. The smallest of the two areas is 5.38 acres and the larger area is approximately 102 acres. This compound contains 44 buildings and several trailers which are categorized as administrative, shops (trades), transportation, and supply and storage/issue. A similar area exists just east of Knox Road, occupied by Construction Shop #1, identified as "Area 9". Unpaved portions of both areas are used for housing cargo containers (used for storage) and for the storage of equipment and materials.

(b) Building 25007 (SNORT) and vicinity: Open storage and general traffic take place between widely spaced buildings and trailers. This includes the magazette areas to the southwest and west. Portions of this area are actively traveled on a daily basis. This potential source is identified as Areas 2 and 3 in Table 1.

(c) Chlorination Facility South of the Waste Water Treatment Plant: This facility, identified as Area 6, is used for chlorinating treated water from the waste water treatment plant. It consists of three small buildings, a chlorine contact chamber, and various irrigation pumping apparatus. This water is then used to irrigate the Golf Course. Unpaved areas around and between buildings are disturbed by vehicles on a daily basis.

(d) China Lake Gun Club: Identified as Area 10, the China Lake Gun Club site is located north of the SNORT Access Road, south of Armitage Field. Disturbed areas include unpaved areas around and between buildings, as well as unvegetated berms behind and within target areas. Due to safety considerations Gun Club activities at this site are limited to trap and skeet shooting. The western berm area is no longer in use, and has already revegetated to a considerable degree. The eastern berm area is still used on occasion, and remains unvegetated.

(e) Ordnance Impact Areas: "Area 11" on Table 1 consists of a variety of ordnance impact areas located on the testing ranges. As the name implies, these areas are used as target zones for certain types of tests using both live and inert ordnance, and generally have only sparse vegetation. The ground within these areas contains an unknown amount of unexploded ordnance, and is considered "off-limits" to vehicular traffic, except under very unusual circumstances.

Responses

(f) Drainage Berms near Hangars 4 and 5: Identified as Area 12, these berms comprise a portion of China Lake's storm drainage system, and are intended to divert flood waters away from the two new hangars. Since they were constructed within the last two years, these areas are not yet heavily revegetated. However, natural revegetation is slowly taking place, and these areas are no longer actively disturbed.

(g) Hangars 4 and 5: Area 13 includes all unvegetated areas near Hangars 4 and 5, between the aprons and the surrounding fence. For security purposes, vegetation in these areas must be kept to a bare minimum. However, vegetation is removed by use of herbicides to minimize the amount of ground disturbance.

(h) Overrun Areas at Armitage Field: For safety purposes, overrun areas (identified as Area 15) have been provided at the end of each runway at Armitage Field. These areas are not actively disturbed, but all vegetation has been removed by use of a herbicide.

(i) Vicinity of Old Roundhouse: Area 14 consists of areas in the vicinity of the Old Roundhouse, which is currently out of service along with the rest of the China Lake railroad spur. The Roundhouse proper is used by the Public Works Department for storage of electrical transformers, fused cut-outs, pipe insulation, and similar material. This area is infrequently traveled.

(j) Miscellaneous unpaved parking areas: Various unpaved parking areas can be found at China Lake, usually near buildings that are remote and/or have very few employees. These areas are located in various locations at China Lake, and are not individually identified.

(k) Berms around industrial waste water ponds: These berms (identified as Area 5) receive limited maintenance and have begun to naturally revegetate.

2.3 Construction and Demolition Activities:

Much of the large facility construction work at China Lake is performed by contractors; however, an increasing amount of construction and/or demolition at the Station is performed in-house by the Public Works Department. The actual location(s) of this work vary with time, and are not individually identified.

2.4 Earth Moving/Open Storage Piles:

(a) Borrow Pit off of Sandquist Road: Identified as Area 4 in Table 1, this is the borrow pit currently in use for construction activities at China Lake. It is approximately 20 acres in size, and provides a wide range of materials, from fine sand to coarse gravel. Active operations occur at the center of the pit. The edges of the pit are normally

vegetated. This site is accessed on average about once a week for material. There may be weeks when there is no activity, and there are short periods, sometimes for a week or two, when the area receives intensive activity.

(b) Old Borrow Pit east of the Golf Course: Identified as Area 7 in Table 1, this borrow pit has been out of use for over 5 years and has begun to revegetate naturally.

(c) Open Storage Piles: Various miscellaneous storage piles may be found at China Lake at any given time. These are often, but not always, associated with construction or demolition projects (see above). Sand or gravel are usually the material being stored, although piles are often used for storage of asphalt millings and other materials suitable for re-use.

3.0 PROPOSED CONTROL MEASURES:

3.1 Unpaved Roads:

China Lake has only one unpaved road within the affected area that meets the applicability requirements of this rule. This is the section of road between Talon and Lauritsen Roads. As part of the planned construction of a new Aircraft Ready Fuel Facility, Lauritsen Road will be realigned. It will then connect with this currently unpaved access road to Hangar 4, which will also be realigned, and which will be paved along with the realigned portion of Lauritsen. This work is currently planned for the coming fiscal year (1 Oct 94 - 30 Sep 95). Since application of chemical stabilizers may hinder the natural revegetation process, the unpaved road will be controlled by watering at the beginning of each business day until the realignment has been completed, at which time active disturbance of the old roadway will cease. The area will then be left alone to revegetate naturally.

3.2 Disturbed Areas

(a) Public Works Compound: This area receives moderate vehicle traffic on a daily basis by Public Works personnel. There are two distinct areas within the compound. The smaller of the two areas consists of approximately 5 1/2 acres and is 50% covered with buildings, concrete slabs, landscaped areas, and deteriorated paving. The other 50% of the space is devoted to open storage of equipment, rubble piles, gravel piles, and similar public works related items. Proposed stabilization of traffic areas not currently paved will utilized recycled asphalt or concrete, spreading and compaction of decomposed granite, or application of chemical dust stabilizers.

The main area of the Public Works compound is approximately 44% covered with improvements with a remainder of 57 acres which are open and subject to fugitive dust emissions. Treatment will consist of a combination of stabilization processes as

determined by the open usage and will encompass one or more of the processes used in the smaller compound area (see above).

(b) Building 25007 (SNORT) and vicinity: This area receives limited vehicle traffic on a daily basis. Stabilization of unpaved traffic areas will consist of utilizing recycled asphalt or concrete, spreading and compacting of decomposed granite, or application of chemical dust stabilizers. Non-traffic areas will be allowed to revegetate naturally.

(c) Chlorination Facility South of Waste Water Treatment Facility: Maintenance personnel perform daily routine maintenance and inspection of the apparatus at this location. Therefore, this area receives limited vehicle traffic on a daily basis. If soil stabilization is required in unpaved traffic areas it will consist of utilizing recycled asphalt or concrete, spreading and compacting of decomposed granite, or application of petrochemical dust stabilizers.

(d) China Lake Gun Club: The western berm has already begun to revegetate. The eastern berm is still used on occasion, but is not actively disturbed by vehicles (only by the impact of small arms fire). We propose leaving both berms alone so that they may revegetate naturally. The areas around and between buildings are occasionally disturbed by vehicles when the gun club is in use. Since this occurs only occasionally, we propose treating the area with water prior to any functions taking place at the facility.

(e) Ordnance Impact Areas: These areas are occasionally impacted by test items, but are very rarely disturbed by vehicles as the areas are generally considered "off limits". We propose leaving these areas alone. Treatment of an active high explosive impact area is impractical due to safety considerations.

(f) Drainage Berms near Hangars 4 and 5: Vegetation in these areas was removed during construction of the berms in 1992. However, no further active disturbance of these areas has taken place or is planned. The soil in these areas has already formed its natural protective crust, and vegetation is slowly reestablishing itself. We propose leaving these areas alone to revegetate naturally, as application of chemical stabilizers may only hinder this process.

(g) Hangars 4 and 5: The areas between the aprons and the fences must be kept unvegetated due to security considerations. However, no active disturbance of these areas takes place, and vehicle access to the entire hangar area is tightly controlled. We propose continuing de-vegetation by application of herbicides by licensed technicians (rather than by mechanical means) in order to minimize soil disturbance. Since the areas are otherwise completely undisturbed, and vehicle access to each hangar area is tightly controlled, we propose applying no other RACM to this area unless the area is to be disturbed for some unforeseen reason.

(h) Overrun Areas at Armitage Field: These areas at the end of each runway must be kept clear of vegetation due to safety considerations. However, no active disturbance of these areas takes place. We propose continuing de-vegetation by application of herbicides by licensed technicians (rather than by mechanical means) to minimize soil disturbance. Since the areas are otherwise completely undisturbed, we propose applying no other RACM to this area unless the area is to be disturbed for some unforeseen reason.

(i) Vicinity of Old Roundhouse: This area received little vehicular traffic. Only when material is to be recovered or stored in the Roundhouse does this area receive vehicular traffic. Because of the light traffic in and around this area, it is recommended to leave it as it is. If a control measure is required for those areas not currently paved, stabilization will be achieved by utilizing recycled asphalt or concrete, spreading and compaction of decomposed granite, or application of chemical dust stabilizers. Non-traffic areas will be allowed to revegetate naturally.

(j) Unpaved Parking Areas: The parking areas around facilities which are not paved will be identified. Those areas requiring parking and traffic aisles will receive the necessary improvements. Stabilization of trafficked areas not currently paved will consist of utilizing recycled asphalt or concrete, spreading and compaction of decomposed granite, or application of chemical dust stabilizers.

(k) Berms around industrial waste water ponds: These areas have not been disturbed for over five years, allowing the soil to form its natural protective crust. These areas are not actively disturbed and are fenced to prevent access by unauthorized personnel. We propose taking no further action, so that the area may revegetate naturally.

3.3 Construction/Demolition Activities

A list of standard dust abatement measures has been developed by NAWS China Lake personnel, which must be implemented for both contractor and in-house projects. These measures will be included as conditions of approval during environmental review of each proposed project under the National Environmental Policy Act. For projects performed under contract, the list will also be incorporated into the construction/demolition contract to ensure compliance by contract personnel. The list of dust abatement measures is provided as Appendix B.

3.4 Earth Moving/Open Storage Piles

(a) Borrow Pit off of Sandquist Road: This area is "actively disturbed" about once a week, when the site is accessed for materials. Since only a small portion of the borrow

pit is disturbed at any given time, we propose application of water to the areas to be disturbed prior to (and after) accessing the pit to excavate. We propose leaving undisturbed portions of the pit alone.

(b) Old Borrow Pit east of the Golf Course: This area has not been "actively disturbed" for over 5 years. The soil has already formed its own natural protective crust. We propose leaving this site alone, to allow it to revegetate naturally.

(c) Open Storage Piles: All open storage piles of materials that may be potential sources of fugitive dust will be covered by a tarp or other suitable material. The storage pile(s) in the smaller area of the Public Works Compound could be controlled with area sprinklers to keep a protective crust over the material in the pile(s).

4.0 COMPLIANCE SCHEDULE:

Funds for application of Reasonably Available Control Measures (RACM) to sources as described in the above section have been allocated in China Lake's budget for Fiscal Year (FY) 1995 (1 Oct 94 - 30 Sep 95). Application of RACM will take place on the following schedule:

Road to Hangars 4 & 5: Begin application of water immediately after 1 Oct. Construction of new paved road will commence during FY95 and will be completed during FY96.

Application of chemical dust palliatives, cape seal, or other applicable methods to areas identified in the plan will be accomplished by 31 December 94.

Application of water: effective immediately after 1 October, to be applied as proposed in section 3.

Construction Demolition: List of Dust Control Practices (Appendix B) is already being incorporated into all new contracts and site approvals for all construction/demolition projects performed either by contractors or by in-house personnel.

Open Storage Piles: Covered or watered as appropriate, effective immediately, and as existing piles are located.

All areas proposed to be left as is are to be made "off-limits" to vehicular traffic effectively immediately, or access restricted as proposed in section 3.

Comments

Responses

1 LE 1: Potential Fugitive Dust Sources and Proposed RA...[1]

	SOURCE	CONTROL MEASURE(S)					
		leave as is	reveg[2]	water	chem	pave	cover[3]
1	Hangar 4 Access Road			•		•	
2	Bldg 25007 and vicinity (SNORT)				•		•
3	Magazette areas SW of Bldg 25007 and west of Bldg 25037				•		•
4	Borrow pit on Sandquist Road	•		•			
5	Berms at Industrial Waste Water Ponds	•					
6	Chlorination Facility So. of WWTF			•			•
7	Old Borrow Pit east of Golf Course	•					
8	Public Works Compound				•		•
9	Shops area east of PW Compound				•		•
10	China Lake Gun Club	•		•			
11	Various ordnance impact areas	•					
12	Hangar 4/5 area - drainage burms	•					
13	Hangar 4/5 - between apron and fence	•			•		
14	Vicinity of old Roundhouse	•			•		•
15	Overrun areas at ends of runways	•					
n/a	Various Open Storage Piles	•					•
n/a	Miscellaneous Parking Areas				•		•
n/a	Construction/Demolition [4]						

[1] One or a combination of identified measures may be used. Areas assigned numbers are identified on the maps in Appendix C.
[2] Revegetate naturally, as opposed to actively reseeding the area.
[3] Cover with recycled asphalt or concrete, or spreading and compacting decomposed granite. In the case of storage piles, cover with tarp, plastic, or other suitable material.
[4] See Appendix B for list of Dust Control Measures required for Construction/Demolition project

APPENDIX B

Requirements for Dust Control at Construction and Demolition Sites

The contractor shall take reasonable precautions to prevent visible particulate matter from being airborne from the construction site, under normal wind conditions. Reasonable precautions include, but are not limited to:

1. The contractor shall have available a minimum of one watering truck to apply water to the haul roads and construction areas. Water will be applied to these areas at least twice a day. Additional watering will be required if the soil dries to the point that the site becomes a source of fugitive dust.

2. The contractor shall post and observe a speed limit of 25 mph at the project site. During normal daily activity the speed limit will be strictly enforced by the contractor.

3. If wind conditions are such that the contractor cannot control dust, the contractor shall shut down all construction operations except for equipment used for dust control at the project site.

4. Water or other dust suppressants shall be used to prevent particulate matter from becoming airborne in handling dusty materials to open stockpiles and mobile equipment. All stockpiles of topsoil, sand, and other like materials shall be covered to prevent airborne fugitive dust.

5. The contractor shall be responsible for removing materials tracked onto paved roadways from dirt roadways by construction vehicles associated with the project.

6. All bulk materials being hauled on paved roadways shall be covered during transit.

7. The natural topography shall be maintained to the extent possible during grading and other earth movement.

FUGITIVE DUST CONTROL PLAN
FOR THE
NAVAL AIR WEAPONS STATION
CHINA LAKE, CALIFORNIA

Appendix C
Maps Showing Locations of
Potential Fugitive Dust Sources

NOTE: MAPS AVAILABLE - BUT NOT INCLUDED IN THIS DOCUMENT

31 August 1994

Appendix A

BMPs for Dust Abatement Practices on Unpaved County Roads in Oregon

Prepared for OACES
By
Parametrix, Inc.

Table of Contents

Comments

1. Introduction

The Dust Abatement Appendix is part of the County Road Maintenance Submittal Template to NMFS for Coverage under Limit 10 of the 4(d) Rules for Salmon and Steelhead. This template was developed to meet the specific requirements outlined by the National Marine Fisheries Service (NMFS) in Limit 10 of the 4(d) rules for the protection of salmon and steelhead. Dust abatement is included as a section in Limit 10; this appendix is meant to provide Oregon counties with an analysis that can be included with the Road Maintenance submittal for Limit 10 protection.

The Limit 10 template for road maintenance relies on the ODOT road maintenance manual and requires each county to follow the approved BMPs outlined in the manual or practices that are substantially similar. Each county is required to provide baseline environmental information as well as evidence of monitoring and training programs that accompany the maintenance program. The Dust Abatement Appendix provides BMPs for the application of dust suppressants as well as an effects analysis that demonstrates that the application of these materials will not cause significant impacts to water bodies that provide habitat for listed salmonids.

If a county wishes to include dust abatement as part of its routine road maintenance submittal for protection under Limit 10 of the 4(d) rules, the Dust Abatement Appendix must be submitted to NMFS in its entirety along with the template submittal for routine road maintenance. The document has been informally reviewed by NMFS so that each submittal will be uniform, allowing for a facilitated review process.

Responses

Comments

2. Description

Dust abatement practices help to stabilize gravel roads to reduce damage and maintenance costs. Depending on the type of road treated, application of dust palliatives creates a hard, compact surface that resists potholing, rutting and loss of aggregate.

In addition control of road surface soils reduces the short term, localized air quality hazards associated with unpaved roads. For people living along dirt roads, dust can cause inconveniences from dust settling on their property. While, not all county gravel roads require dust abatement applications, there are situations where dust control is either requested or required.

Dust suppression involves the application of a dust palliative to non-paved road surfaces to temporarily stabilize surface soils, leading to a reduction of dust. Counties provide dust abatement with their own funding in only a few circumstances. In some cases, Counties apply palliatives when excessive truck traffic utilizes a non-paved gravel road such as a quarry or construction site. This practice is for the purpose of the reduction of dust as well as road stabilization. In other instances, private contractors apply dust palliatives to county roads for residents living along county roads to reduce the amount of dust produced by passing vehicles.

Application of dust palliatives often occurs at the beginning of the summer and depending on the road surface and grade, two "light" applications may be made to avoid run off of the palliative from the road surface. In preparation for palliative application, roads are graded and "roughed up" to allow for greater penetration of the palliative. Application normally consists of 0.5 gallons of material per square yard of road and is applied using an applicator truck. Descriptions of the Best Management Practices (BMPs) to be followed for the application of dust palliatives are in Section 4.

Responses

3. Palliatives

The following materials are proposed for use in county road dust abatement practices on unpaved roads. They have been selected because of their effectiveness in controlling fugitive dust, as well as minimizing potential environmental impacts.

Lignosulfonates

Lignin is a polymer in the secondary cell wall of woody plant cells that helps to strengthen and stiffen the wall. During the various pulping processes, lignin by-products are produced. Lignosulfonate is a byproduct of the sulfite method for manufacturing paper from wood pulp. Sometimes it is called sulfonated lignin. Lignosulfonate is a complex mixture of small- to moderate-sized polymeric compounds with sulfonate groups attached to the molecule.

Lignosulfonates have a long history of use on roads as a method for dust control and surface stabilization. Lignosulfonates have a natural adhesive property when moist. When applied to gravel roads, the lignosulfonate solution coats individual road particles with a thin adhesive-like film that binds the particles together. The lignosulfonate acts as a dispersant. By attaching to the particle surface, it keeps the particle from being attracted to other particles and reduces the amount of water needed to use the product effectively. This allows the particles to pack closer together for a stronger surface. Consequently, water uptake by the roadbed surface is greatly reduced and the binder is less likely to be washed away by rain.

Lignosulfonates used for road applications are usually shipped in a concentrated solution and diluted with water on the job site to about a 25 percent solid content. Road conditions and climate can affect the application rate. However, as a general rule for dust control, a diluted solution of lignosulfonate is applied at a rate of one-half gallon per square yard.

Magnesium Chloride

Magnesium chloride is a naturally occurring element and is extracted from salt-water solutions such as those found in seawater. To extract the magnesium chloride brine, water is removed from the salt water by solar evaporation, other energy, and a simple refinement process until other chemicals have been extracted resulting in magnesium chloride brine. This brine can then be further dehydrated to produce magnesium chloride solids.

Magnesium chloride can be adapted and designed to provide highest efficiency depending on prevailing dust conditions, anticipated traffic, and type of soil. Dilution can also be varied to obtain the greatest possible economy and minimize environmental impact. Some soil types may be best treated with a one-time heavy application of

product, whereas others may require several light applications. As a general rule, the rate of penetration of magnesium chloride is rapid in sandy soil, moderately fast in silty soil and slow in clay.

4. Effects Analysis

Water Quality

A literature search was conducted to determine the possible effects of lignosulfonates and magnesium chloride on water quality. Though there has been increased interest in this subject recently, there remains little scientific data that fully explores the potential effects of these materials when used as dust palliatives. Both lignosulfonate and magnesium chloride have been tested to determine their potential impacts on water quality, fish and wildlife when introduced directly into surface waters. However, we found no studies that evaluated the effects of these materials when their movement is controlled through application BMPs. Therefore, this appendix will make the assumption that these materials will be applied in a way that reduces their ability to move, thereby limiting the concentrations that reach surface waters, and reducing the likelihood of detrimental effects on receiving water bodies. These BMP recommendations are based on recommendations from County Road Masters who have worked with these materials for many years.

Research does confirm that these materials have limited ability to move (Martin, 1989 and ITT Rayonier, Inc., 1973). They are bonding agents that adhere to material in dry conditions. The BMPs being implemented are meant to further reduce their ability to move and in the unlikely event that these materials were to reach a water body, it would be at very low concentrations that are unlikely to negatively impact the receiving water body.

This analysis was conducted in accordance with the NMFS document "Making Endangered Species Act Determinations of Effect Guidance". The Pathways and Indicators are a Section 7 mechanism that provides a convenient tool for this analysis. The matrix from the report was used to determine the potential for effects to listed salmon and steelhead. The water quality elements that have the potential to be impacted by dust abatement practices were the primary focus. This analysis will provide the scientific background for the BMP recommendations contained in the Oregon County Road Maintenance submittals for coverage under the 4(d) rules for Salmon and Steelhead.

Magnesium Chloride

When magnesium chloride is introduced into the environment as a deicer or as a dust palliative, it is highly soluble in water and has the potential to move through the soil with

water. The movement is dependent on the rate and frequency of rainfall, the drainage characteristics, and soil type. Application of magnesium chloride as a dust palliative is less likely to be carried by water runoff than when it is used as a deicer since it is applied as a palliative during dry periods to reduce dust.

Because of magnesium chloride's ability to dissolve in water, lateral movement can occur. If high volumes of rainfall occur, magnesium chloride can move as either surface runoff or as soil leachate. Under these conditions, it is principally the constituted ions Mg_2^+ and Cl^- that migrate through the environment. These disassociated ions migrate rather than the hydrated magnesium chloride. Because of the widespread occurrence in rocks and soils, and its ready solubility, magnesium is present in nearly all waters. The addition of magnesium from dust palliatives would be insignificant when compared to that already found in the environment (Heffner, 1992).

The usual application of magnesium chloride will be 0.5 gallons per square yard; this is equivalent to 18 tons per mile. The 18 tons per mile includes the weight of the water that is used to dilute the brine solution. This results in an application rate for magnesium chloride of 7.5 to 9 tons per mile.

The typical weight of sodium chloride as a road deicer is 20 tons per mile. With the melted snow and ice and applications on paved roads, the chloride concentrations rise to above 250 ppm. The concentrations of magnesium chloride used for dust abatement are considerably less than those observed for calcium chloride used as a deicer. (Singer et al. 1982) Therefore it is unlikely that receiving waters could have concentrations high enough to cause growth or survival problems for fish.

The Colorado Department of Transportation (CDOT, 1998) conducted extensive research on the environmental impacts of magnesium chloride as a deicer on state roads. While this research focuses on a different activity than dust abatement, the results in terms of the chemicals environmental impact are relevant.

Chloride concentration from two separate sources, magnesium chloride and sand with chloride, increased background chloride concentrations by 50 to 100 mg/L during winter application. These concentrations are described as being below levels considered potentially harmful to the most sensitive aquatic organisms. (CDOT, 1998)

Magnesium chloride application as a dust palliative will occur in the summer months. As described above, the ability of magnesium chloride to move to the rivers will be drastically lower than in the Colorado tests because of the minimal rainfall during the summer months when palliatives are commonly applied. The application BMPs include additional measure to limit movement

The conclusions of the CDOT report stated that magnesium chloride is "highly unlikely to cause or contribute to environmental damage at distances greater than 20 yards. Even very close to the roadway, the potential for magnesium chloride to cause environmental damage is probably much smaller than other factors related to road maintenance."

Results

Water Temperature

With the proper and safe application of magnesium chloride according to the Minimization and Avoidance BMPs, the function of existing habitat will be maintained in areas where it is applied. No research was found that would indicate the application of magnesium chloride would have any significant negative impacts to water temperature.

Sediment

Because of its use to reduce fugitive dust, in some cases the use of magnesium chloride may act to restore areas that are limited by sediment deposition in a stream. Magnesium chloride may be effective in reducing the amount of fines that are recruited into a system.

Chemical Contaminants/Nutrients

Proper application of magnesium chloride will reduce the chance that any of the material will reach surface waters or migrate through ground water. For this reason, all research indicates that magnesium chloride will not negatively influence chemical contamination and nutrients in streams with listed salmonids and will likely maintain current conditions.

Ligninsulfonates

Ligninsulfonates encompasses a complex group of high-molecular-weight polymers. As a group lignins are second only to cellulose in abundance as natural polymers. Since very few biological agents can degrade the lignin molecule, it is extremely environmentally stable. In fact the Food and Drug Administration (FDA) currently allows for the use of ammonium-, calcium-, magnesium-, and sodium-lignosulfonates in animal feeds. They are commonly used in pelleted feeds for fish at a level of 2 to 2.5 percent, to increase water stability.

There can be issues associated with increased oxygen demand in a stream when lignosulfonates are introduced directly into a stream from pulping plants. Receiving water near pulping plants experiences an increased oxygen demand and the water takes on a yellowish-brown tint (Schwenderman, 1981). Effluent from pulping plants is often up to 55% lignosulfonates so it is at a much higher concentration than would be achieved from its application as a dust palliative. There has not been any research that shows significant impacts to water quality as a result of lignosulfonates applied as a dust palliative.

Results

Temperature
No research that was found indicated that an application of lignosulfonates anywhere near a fish bearing stream would have any impact on temperature.

Sediment
The application of lignosulfonates may restore the functioning condition of a stream that is impacted by sediments that originate on gravel roads in the watershed. By limiting the fines that reach streams, sediment will be reduced and existing conditions would be improved.

Chemical Contaminants/Nutrients
Chemical contaminant and nutrient addition to a steam will be maintained/avoided with the proper application of dust abatement palliatives.

Toxicity (LC50)
The LC50 test measures the lethal concentration (LC) of a product expressed in parts per million (ppm) that will produce a fifty percent mortality rate in the test group in 96 hours (4 days). When looking at the results of a LC50 test, the larger the concentration the less toxic the material. Typically less than 100ppm is considered toxic, and 1,000ppm is considered practically nontoxic.

Table 1 shows the results from tests on rainbow trout (onchorynchus mykiss) conducted by the British Columbia Ministry of Environment looking at a wide range of materials. The palliatives under consideration for use by Oregon counties were in the range of practically nontoxic (>1000ppmto >10,000ppm).

Magnesium Chloride

Impacts of chloride have been documented mostly in the Northeast. In these cases large amounts of chloride are applied to roads and highways for de-icing purposes. There are environmental impacts associated with chloride but most have been seen at the higher application rates. Worst case scenarios for runoff from magnesium chloride applications as a deicer are less than 70 ppm within 5-30 ft of the application (Martin, 1989). 70 ppm is the concentration of chloride for irrigation water and is considered safe for most plants.

Kunkle studied the impacts of road salt on a fresh water stream in Vermont, USA. Here the application of pure salt to paved roads adjacent to the stream resulted in salt concentrations that did not exceed 100ppm, with the mean levels below 50. (1972) Although the addition of magnesium and chloride in streams can cause hardness in water, no regulation exists which limits the concentrations found in drinking water. (Schwendeman, 1981)

Lignosulfonates

Lignosulfonates have been studied at high-level concentrations when discharged from pulping plants directly to a water body. These discharges have been shown to increase biological oxygen demand and produce a yellowish-brown tint to the water (Schwendeman, 1981). No research was found that evaluates the rate at which lignosulfonates move in the soil or how concentrated it would be reaching surface water The LC50 concentration for lignosulfonates was calculated to be between 5,200ppm and 6,400ppm, classifying them as practically non-toxic.

Table 1: Rainbow trout 96-hour LC50 Dust Suppressant Results

Substance	ppm
35% Calcium Chloride	45,000
35% Magnesium Chloride	9,000
Sodium Lignosulfonate	6,400
Calcium Lignosulfonate	5,200
Emulsion Oil	200
Laundry Detergent	10

(Ministry of Environment, 1990)

5. Minimization and Avoidance:

Road maintenance employees and anyone applying dust palliatives on county roads will use the following BMPs to prevent palliatives from reaching water bodies thereby mitigating any possible water quality impacts:

- During preparation for application of dust palliatives, gravel roads will be tight bladed or processed (cut 2" and watered, then laid gravel back to grade and roll) to bring fines to the surface.
- Dust palliatives, when applied, will remain on the road surface and will not go over the road edge. The use of berms at the road shoulder or applying palliatives at a low rate are two methods to achieve ensure material remains on the road surface.
- All private contractors that apply palliatives to county right of ways must first obtain a dust control permit for each section of road that will receive an application. (See attached example of dust control permit.)
- Application shall follow the conditions of a dust abatement permit outlining the Minimization and Avoidance methods described here and assure materials are applied in a manner that is not detrimental to either water or vegetation.
- A 1-foot buffer zone on the edge of gravel will be used if the road width allows.
- The machinery used to apply palliatives will carry adequate spill protection equipment during application.
- Dust palliatives will not be applied while raining. (Where practicable, a 3-day forecast of clear weather should follow any application of dust palliatives).
- Environmentally-sensitive cleaning agents will be used on trucks and equipment used for palliative application at the designated areas with the county for truck maintenance and cleaning.

(Counties must include a map or addresses of designated cleaning and maintenance areas for application equipment.)

- Excess materials will be disposed of at designated and approved locations for receiving such materials.

(Counties must include a map or addresses of designated disposal sites for excess material.)

Comments

6. Example Dust Control Permit

This permit allows the applicant or his contractor to treat sectors of Secondary Roads with chemicals to control dust. It is granted subject to the following:

- Two materials are approved for use: Magnesium Chloride and Lignin Sulfonate.
- All contractors receiving a Dust Control Permit are bound to follow BMPs for Dust Abatement approved by the National Marine Fisheries Service to prevent or minimize harm to water quality and the take of salmonids listed under the Endangered Species Act.
- Each applicant will fill out and turn in a Dust Control Permit to the County Public Works Department.
- The applicant or contractor must coordinate application of material with the County Public Works Department at (xxx) xxx-xxxx at least two (2) working days prior to application of the material.
- The applicator will provide adequate notification in the area prior to application of the dust palliatives.
- This permit is valid until October 1 of the year issued, after which the County reserves the right, regardless of actual conditions, to re-blade treated areas in order to prepare the road for winter.
- The permit applicant understands that by signing this permit they assume full responsibility for any and all liability resulting from this treatment of a public highway.

In signing and accepting this permit for dust control, I agree to abide by all of the conditions of the permit as listed above.

Responses

Comments

Permit # _____

PERMIT FOR SURFACE APPLICATION OF DUST PALLIATIVES

Applicant: _____
Address: _____
Mailing Address City State Zip
Phone Number: _____ **Date:** _____
Location and/or description of road section proposed for surface dust control application:

Starting Point: Road Name _____ *Milepost* _____

Ending Point: Road Name _____ *Milepost* _____

Application Distance: _____

Person or Company selected to apply the chemicals or road oils:

_____
(Name)
_____

(Address)

Palliative to be used ***(check one)***
_____ ***[ ] magnesium chloride [ ] lignin sulfonate***

When Application will occur: Date: _____ Time Period _____

I have read the entire permit and have provided all data called for herein truthfully and correctly and I agree to abide by all general provisions set forth herein and attached conditions pertaining to Minimization and Avoidance and Dust Control Permit.
I will provide notification in the area where palliatives will be applied by the following method:

_____

The following signing plan will be used:

_____

_____
(Applicant's Signature)

Responses

Comments

Approved on behalf of [redacted] County

By _____

Date

Permit Number _____

Responses

Comments

Dust Suppressant	Attributes	Limitations	Application	Origin	Environmental Impact
Lignin Sulfonate	Binds surface particles because of adhesive properties. Greatly increases dry strength of material under dry conditions. Retains effectiveness during long dry periods with low humidity. With high amounts of clay, it tends to remain slightly plastic permitting reshaping and additional traffic compaction.	Corrosive to aluminum alloys due to acidity (CaCO 3 added ingredient, can neutralize acidity). Proper aggregate mix (4 - 8% fines) important to performance. Becomes slippery when wet, brittle when dry.	Generally ½ gallon per square yard of road surface. Can vary based on soil condition and application method. Spread by spreader trucks.	By-product of softwood pulping and the sulfite pulping process.	Lignin products have a high BOD (biological oxygen demand) in aquatic systems. Spills or runoff into surface or groundwater may create low dissolved oxygen conditions resulting in fish kills or increases in groundwater concentrations of iron, sulfur compounds, and other pollutants.
Magnesium Chloride	Increases compacted density of road material and the effectiveness is retained after blading. Lower freezing level of water to –27 degrees F., minimizing frost heaves and reducing freeze-thaw cycles.	Solubility results in leaching during heavy rain.	Generally ½ gallon per square yard of road surface. Can vary based on soil condition and application method. Spread by spreader trucks.	Produced from natural salt brine and a by-product of potash production. Results from a reaction between hydroxide and hydrochloric acid.	From *Studies of Environmental Effects of Magnesium Chloride Deicer in Colorado. (CDOT, 1999)* Unlikely to cause environmental damage if safely applied at distances greater than 20 feet from water body. Study was done evaluating it as a deicer. Dilution of magnesium chloride by melting snow and ice was a factor

07/22/03

Appendix A
BMPs for Dust Abatement
Practices on Unpaved
County Roads in Oregon
DRAFT

Page 15 of 18

Responses

Comments

Pathways: / Indicators	Environmental Baseline			Effects of the Actions		
	Properly Functioning	At Risk	Not Prop. Functioning	Restore	Maintain	Degrade
Water Quality						
Temperature					X	
Sediment				X		
Chem. Contam./Nut					X	
Habitat Access:						
Physical Barriers						
Habitat Elements:						
Substrate					X	
LWD					X	
Pool Frequency					X	
Pool Quality					X	
Off-Channel Habitat					X	
Refugia					X	
Channel Conditions & Dyn:						
Width/Depth Ratio					X	
Streambank Condition					X	
Floodplain Connectivity					X	

Responses

Flow/Hydrograph:						
Peak/Base Flows					X	
Drainage Network					X	
Increase					X	
Watershed Conditions:						
Road Den. and Location					X	
Disturbance History					X	
Riparian Reserves					X	

Effects of proposed Actions on Water Quality Indicators/Pathways:
If the minimization and avoidance procedures outlined in this document are followed, the application of dust abatement materials to county roads will maintain the water quality of streams in the area. In addition application of dust palliatives will help to improve sediment issues by reducing the amount of loose sand and gravel on the road.

7. Bibliography

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